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EDITORIAL.

NOTWITHSTANDING the removal of the tariff on quinia and its salts, there has yet been no fall in price which would warrant the exuberant joy of many of our contemporaneous medical exchanges, some of whom have given vent to their feelings in verses. The first effect has been, of course, to raise the price of the commodity abroad, and to bring into our market a considerable amount of quinia-preparations in anticipation of a larger profit than could be had from their sale in Europe. A fall in price has naturally resulted here, but it has by no means been as great as the friends of the measure have expected; and the price of the sulphate still remains at a figure which will pay a profit to manufacturers in the United States.

Apothecaries have very generally been annoyed by the complaints of their patrons that they were not receiving the benefit from the change in the tariff which they had been led to expect, and thus far nobody has reaped any benefit from the measure and the customs have lost the revenue. We observe also that some of our medical cotemporaries are beginning to discover that the question has more sides than the one they became so hysterical about.

THE tariff question is doubtless one which will continue to demand the attention of Congress; and its solution is likely to become easier, if we can draw any conclusions from the increasing favor with which American manufactures are being received abroad. This is not so apparent in the case of drugs and medicines as it is in some other branches of trade, but there is no questioning the fact that for textile fabrics, metal work, wooden ware, leather goods, agricultural implements, agricultural products of the higher class, etc., there is a rapidly growing foreign demand; and it may fairly be doubted whether the removal of the tariff even now would affect most of these industries unfavorably in this country. When these articles can be carried across the ocean and compete successfully with similar wares in markets where home-products have heretofore been almost the only ones known, it is not probable that these foreign goods would meet with a favorable reception here.

It is not unlikely that before long a similar state of things may be brought about in the market for chemical and pharmaceutical products. There seems no good reason why even now the manufacture of many essential oils, aromatic waters and the growth of herbs capable of being produced in our Southern States, might not be made to yield a handsome revenue to those who would engage in the business, and the only obstacle in the way appears to be the lack of thrift and industrious habits among the residents of that portion of our country. During the administration of the present Commissioner of Agriculture, Mr. William G. Le Duc, much good work in this direction has already been done by the Department of Agriculture, and the forthcoming report is said to embrace a record of work of still greater value than that which has preceded it.

ON another page our readers will find information of especial interest to such as are anticipating an attendance at the meeting of the American Pharmaceutical Association. We hope that many of them will go prepared to contribute something to the Centennial Fund, the nature of which must already be known to them, since we have repeatedly referred to it, and it has been made the subject of several special reports to the Association.

IT would be no disadvantage to our National and State pharmaceutical and medical associations if, for future meetings, they would choose localities where collections of materials relating to their special sciences have been accumulated, and where a part of the time now devoted to other matters could be spent in acquiring a personal familiarity with these objects of interest, many of which are to be found here only in manufactories, hospitals, museums, libraries, and other institutions of some magnitude.

MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

[ORIGINAL COMMUNICATION.]

ON SOME OF THE CONSTITUENTS OF PHYTOLACCA DECANDRA.

BY A. C. EHRHARD.*

POWDERED poke-root was percolated with three successive portions of ether, and the percolate evaporated spontaneously to dryness. The greater portion of this ethereal extract was dissolved in alcohol and had an *acid* reaction. From a part of this, by means of alcoholic and aqueous reagents, the following results were obtained: With alcoholic solution of potassa, a precipitate soluble in excess; with solution of lime, a precipitate insoluble in excess; with aqueous solution of platinic chloride, a whitish crystalline precipitate. No precipitates were obtained with silver nitrate, potassium iodide, or other reagents. A portion of the alcoholic solution was then treated with acetate of lead, a precipitate obtained and filtered. The excess of lead in the filtrate was removed in the usual manner by hydrosulphuric acid, and on evaporating the final filtrate, the residue was dissolved with the aid of a drop of dilute hydrochloric acid. Platinic chloride produced with this a precipitate, which turned out to contain *potassa*. The lead precipitate was freed from lead by hydrosulphuric acid, and the final filtrate was found to contain *calcium* and *sulphuric acid*.

The remainder of the alcoholic solution was evaporated to dryness on the waterbath, the residue dissolved in ether and shaken with a mixture of acetic acid and water (1 : 10), which produced a flocculent precipitate, which dissolved in concentrated sulphuric acid with an olive-green color changing to purple on applying heat. The acid aqueous, separated from the ethereal solution, was evaporated to dryness to expel the acetic acid, and the residue examined for alkaloids, with a negative result. Although iodine with potassium iodide produced a light-colored precipitate, and ammonia a flocculent precipitate, solution of nutgalls only caused a slight turbidity, and platinic chloride gave no precipitate.

The ethereal solution, after a partial precipitation by acidulated water, was evaporated spontaneously to dryness, yielding a light-brown *fat* or *wax*, part of which was saponified with potassa, leaving a slight residue soluble in dilute nitric acid, but too small for further examination. The soap solution was a clear light-brown liquid.

After treating the original ethereal extract with alcohol, the greater portion of the residue left after the evaporation of the latter was redissolved in ether, when a white crystalline substance was left, which was apparently very difficultly soluble in this menstruum. This was dissolved in boiling alcohol and found to be a *crystallizable acid resin*, insoluble in water, and soluble in ammonia; on evaporating the ammoniacal solution, ammonia was lost, and the acid resin separated. Sulphuric acid dissolves this with an olive-green color, changing to purple on heating, and to red, on adding nitric acid. Reducing agents turn the sulphuric acid solution a dirty purplish color.

The same lot of poke-root, which had thus been exhausted with ether, was then percolated with alcohol, the percolate concentrated (*a*) and set aside. A crop of crystals was thus produced, which were dissolved in water, decolorized with bone-black, and the solution evaporated, when colorless crystals were obtained. They dissolved slowly in strong sulphuric acid, yielding a colorless solution. The aqueous solution of the crystals was found to yield no precipitate with potassium iodo-hydrargyrate, potassium iodo-iodide, picric acid, barium chloride, ammonium carbonate, lime-water, and acetate of lead. Heated in a dry test-tube, they frothed, emitting a peculiar odor, then charred, and by increase of heat became colorless. The crystals were found to be potassa combined with a *peculiar organic acid*. By further concentration (*b*) of the alcoholic percolate, another crop of crystals was obtained, different from the preceding, and neutral. Some of these were dissolved in water, decolorized by animal charcoal, and the solution concentrated. An uncrystallizable substance of a sweet taste remained behind, which gave, with Fehling's test, a brick-red precipitate. The pure crystals, when boiled about ten minutes with a little dilute sulphuric acid, gave the same reaction. The remaining crystals were dissolved in water, the impurities precipitated by acetate of lead, and the solution, after removal of the lead, concentrated, when almost pure *cane sugar* was obtained. The whole remaining alcoholic percolate was then concentrated (*c*) on the sandbath, until all the alcohol was expelled, water added, and the mixture filtered to separate *the resin*. Part of the filtrate was tested with the following reagents with the results stated: phospho-molybdic acid, a light gelatinous precipitate; tannic acid, light flocculent precipitate; potassium iodo-iodide, light-colored precipitate; potassium iodo-hydrargyrate, a very light-colored precipitate; sodium tungstate, and

*Abstract of a thesis presented to the College of Pharmacy of the City of New York, in 1875.

Poke-root was partially analyzed in 1843 by E. Donelly (*Amer. Jour. Pharm.*, Oct., 1843, p. 165). Nothing of special interest, besides the usual constituents of plants, was found in it. No chemical examination has since been published on any part of the plant, unless we may reckon here Reichel's (1836) analysis of another species of Phytolacca, which established the presence in the root of *Ph. drastica* Pöppig of about 6.6% of calcium malate. Baillon (*Compt. rend.*, 80 (1875), p. 426) has published some interesting observations on the behavior of the coloring matter.—ED. N. R.

mercuric chloride, a white precipitate. The remainder of the filtrate was precitated by acetate of lead, and, after removal of the excess of lead by hydrosulphuric acid and evaporating, the residue was dissolved in water. This aqueous solution gave no precipitate with ammonia, but gave light-colored precipitates with picric acid, potassium iodo-iodide, tannic acid, sodium tungstate, and phospho-molybdic acid. The larger bulk of the solution was precipitated with potassium iodo-hydrargyrate, producing a flocculent precipitate, which on the addition of an excess changed to a tough resinous mass. This was dissolved by moderately dilute hydrochloric acid, water added, and decomposed by sulphuretted hydrogen. The solution was freed from the excess of hydrochloric and sulphydric acids by evaporation to dryness, and the residue again dissolved in water. Potassium iodo-hydrargyrate produced in the solution a precipitate, which dissolved on the application of heat and separated again on cooling. [The author's manuscript omits to state what conclusion he arrives at from the facts stated. The behavior of the substance contained in the watery solution obtained by adding water to the concentrated alcoholic percolate appears to point to the existence of an alkaloid soluble in water.—ED. N. R.]

Citrates of Quinia.*

THE author has made investigations in the pharmaceutical laboratory of the University of Dorpat, under Prof. G. Dragendorff, on the composition of various citrates of quinia which may be obtained of a definite composition. He first gives an historical review of the labors of his predecessors.

Dr. Guleani, of Venice, was the first who proposed (in 1832) a method for preparing a citrate of quinia by double decomposition of sulphate of quinia and sodium citrate. The former salt may be either neutral or acid: according to its nature, the proportions of the two salts required to react upon each other will somewhat vary, but they will yield in each case the same product, namely, a neutral salt†

a.) $3(2Qu.H_2SO_4) + 2Na_3H_3(C_6H_5O_7)_2$‡ =
neutral quinia sulphate + "acid" sodium citrate =
$3Na_2SO_4 + 2(3Qu.2Ci)$.
sodium sulphate + neutral quinia citrate.

b.) $3(Qu.H_2SO_4) + 2Na_3C_6H_5O_7$.
acid quinia sulphate + neutral sodium citrate.
$= 3Na_2SO_4 + 3Qu.2Ci$.
sodium sulphate + neutral quinia citrate.

Wittstein analyzed the crystallized salt, and found it to correspond to a formula which in the new notation would be: $2Qu.Ci.5\frac{1}{2}H_2O$.

Dr. Hager, in 1859, directed to prepare it from ten parts of citric acid and twenty-nine parts of pure quinia. Its composition was given as $3Qu.2Ci.10H_2O$. In 1875, the same author changed his directions to one part of citric acid to 3.5 parts of pure quinia. He called the resulting salt neutral citrate of quinia, and gave its composition as $2Qu.Ci.7H_2O$. In 1876, however, he reduced the proportion of quinia to 3 parts, and returned to the original formula, namely, $3Qu.2Ci.10H_2O$.

The Austrian Pharmacopœia directs to saturate citric acid with freshly precipitated quinia hydrate. Dœbereiner (1861) gives for this the following formula: 2Qu.Ci.

Geiger, in 1845, directed the same method of preparation.

The Netherland Pharmacopœia (1871) directs one part of citric acid and three parts of quinia hydrate, which yield, according to Stœder (1878), a salt of the composition $3Qu.Ci.10H_2O$.

Wurtz gives the composition $2Qu.Ci.5H_2O$.

The author now proceeds to give an account of his own investigations. He brought together citric acid and quinia in four different proportions, and analyzed the resulting crystallized salts with the following results:

a. Three molecules of quinia and two molecules of citric acid. He obtained a salt containing 0.3963% of water, 72.99% of anhydrous quinia, and (28.14%, corrected) 26.62% of citric acid, and corresponding to the formula 3Qu.2Ci.

b. One molecule of quinia and one molecule of citric acid. The resulting salt was anhydrous, and contained 64.55% of anhydrous quinia and (32.43%, corrected) 35.45% citric acid. Composition: Qu.Ci.

c. One molecule of quinia and two molecules of citric acid gave a salt containing, when dried in the air, 0.60% of water, 63.79% of anhydrous quinia, and 35.59% of citric acid (calculated by difference). The composition is, therefore, probably the same as that of the preceding salt. Hesse has already stated that by treating one molecule of quinia with a little more than one molecule of citric acid, a salt of the composition Qu.Ci. is obtained.

d. Two molecules of quinia and one molecule of citric acid. This salt contained 1.14% of water, 78.28% of anhydrous quinia, and 20.32% of citric acid. Composition: $2Qu.Ci.\frac{1}{2}H_2O$.

The solubilities of the three obtained citrates is the following, in 100 parts of water:

		Cold. Parts.	Boiling. Parts.
Basic quinia citrate:	2Qu.Ci.	0.1093	2.25.
Neutral " "	3Qu.2Ci.	0.1133	2.39.
Acid " "	Qu.Ci.	0.1566	2.60.

* Abstract of a paper by K. F. Mandelin: *Chinincitrater: Undersökningar i farmaceutiska laboratoriet i Dorpat. Af K. F. Mandelin, fr. Jœnsuu i Finland.* 8vo. Dorpat, 1879.

† Throughout the above text we have abbreviated the formula for *quinia* ($C_{20}H_{24}N_2O_2$) by "*Qu.*," and the formula for *citric acid* ($C_6H_8O_7$) by "*Ci.*"

‡ This stands really for $2Na_3C_6H_5O_7 + 2H_3C_6H_5O_7$.

The Botanical Source of Araroba.

It has been suggested some time ago,* by Mr. E. M. Holmes, that this drug might perhaps be derived from a species of *Cæsalpinia* nearly allied to *C. Sappan* L. This opinion was founded partly on a microscopical examination of the structure of fragments of wood found in the araroba of commerce, and partly on the appearance of a single leaf of the araroba plant, which was found to bear a considerable resemblance in habit to those of *C. Sappan.* This leaf, kindly supplied from the Royal Botanical Gardens at Edinburgh, was obtained from a slip of the plant brought home from Bahia by Dr. J. L. Paterson. Those who are well acquainted with the plants of the Leguminosæ will readily acknowledge the difficulty of judging of the genus from a leaf alone, without flowers and fruit. These have at length been procured, and the true source of the araroba may now be considered to be definitely settled, and the mystery which has so long attended the natural history of the drug to be satisfactorily cleared up. This information is supplied by Dr. J. M. de Aguiar, who has just pubished at Bahia† a pamphlet containing a very full and detailed description of the plant, with illustrations of the leaves and flowers, a copy of which has recently been placed at the disposal of the editors of the *Pharm. Journ. and Trans.* by Mr. T. Christy.

According to Dr. de Aguiar, the flowers and fruit which have been obtained show that the araroba plant is more nearly allied to *Centrolobium* than to *Cæsalpinia*, having truly papilionaceous-flowers and that it belongs to the genus *Andira* of the subtribe Geoffreæ, which is characterized by having a hard drupaceous one-seeded fruit, sweet-smelling violet or purplish flowers arranged in panicles, a calyx with short teeth, and five distinct petals. From *Centrolobium* it is distinguished by the fruit, which in that genus resembles a samara and is furnished with prickles at its base.

The araroba plant is therefore nearly allied to *Andira inermis*, the bark of which was formerly a well-known remedy for intestinal parasites, under the name of cabbage-tree bark or worm bark.‡

The following description is a *précis* made from the information contained in Dr. J. M. de Aguiar's pamphlet :—

The plant from which araroba is extracted is one of the larger intertopical trees which are met with between 13° and 15° of latitude, south of Bahia, especially in the forest Camamu, Igrapiuna, Santorem, Taperoa and Valencia, and rivals in height the tree comonly known under the name of Oleo (*Myrocarpus fastigiatus* or *Myrospermum Erythroxylum**), and sometimes attains even greater dimensions. The ordinary height of the tree is 80 to 100 feet ; the trunk is straight, cylindrical, and in the two specimens which were measured in the thickest part, one was 31 and the other 48 centimetres in diameter. The tree commences to branch at more than a third of its whole height, and forms a not very leafy head, having the form of a segment of a spheroid. The bark of the tree is not very thick and appears to contain scarcely any of the active principle of the plant. The wood has a yellow color, and is very porous, having numerous longitudinal canals visible to the naked eye, although these are more distinctly seen under a lens. The trunk in a transverse or tangential section presents lacunæ, more or less large according to the age of the tree, and in these a pulverulent substance (araroba) is found, which in trees recently cut down and before being dried is of a light or pale tint, clearer than that of the wood. The medullary centre exhibits a canal different in appearance from the lacunæ, having a diameter much more considerable. The young branches are entirely fistulose.

So far these particulars seem to correspond exactly with the statement of Dr. Rameiro A. Monteiro, published in the *Journal de Thérapeutique*, vol. vi., p. 248.†

The following details, however, have not, so far as is known, been before published in this country.

The leaves are alternate, compound, and paripinnate. The petiole in two specimens which were measured was in the one 32 and in the other 44 centimetres in length, having a variable number of pairs of stalked leaflets, in one specimen 20, and in another 24. The leaflets are alternate and articulated, oblong, obtuse, entire, and emarginate at the apex, measuring from 2½ to 4½ centimetres in length, and from 1 to 1½ centimetres in width. The distance between the points of insertion of the leaflets is about 2 centimetres, so that the leaflets only slightly overlap each other.

The common petiole or rachis is slender, convex on the under surface, and hollowed above into a small, very smooth furrow ; the secondary petioles which measure about half a centimetre in length are accompanied for a small distance by the rudiments of stipels. The leaflets are feather-veined, of a green color on the upper surface and of an ashy hue beneath. The inflorescence is centripetal, consisting of a panicle with a variable number of racemes, each of which consists, in the more luxuriant specimens, of about eight flowers or flower buds. The flowers are shortly stalked, alternately arranged, and are each furnished with a bract, which does

* *Pharmaceutical Journal* [3], vol. v., p. 801, note †.

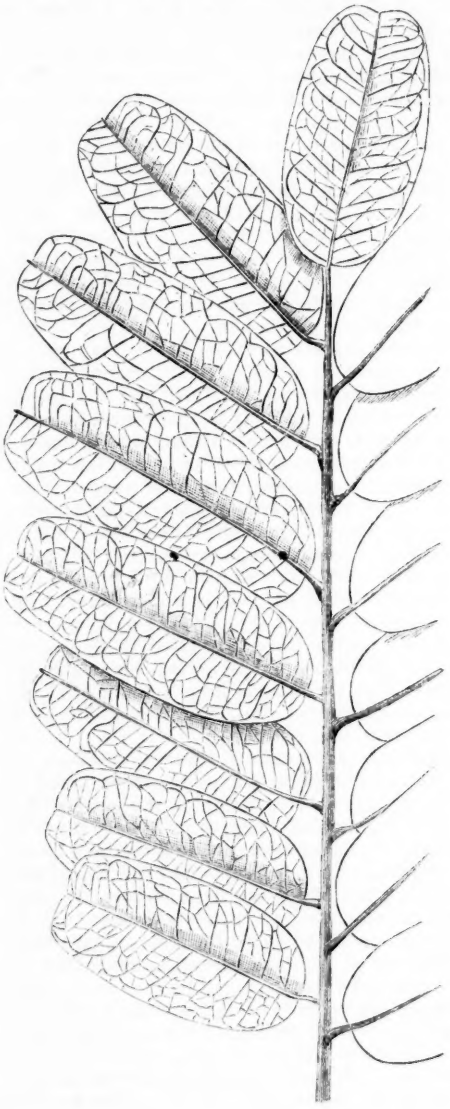
† Memoria sobre a Araroba, pelo Dr. J. M. de Aguiar. Bahia, 1879.

‡ Lewis, 'Materia Medica,' p. 320.

* Almeida Pinto, 'Diccionario de Botanica Brasileira,' p. 335.

† *Pharm. J.* [3] vol. viii., p. 1048. New Rem., 1879, 239.

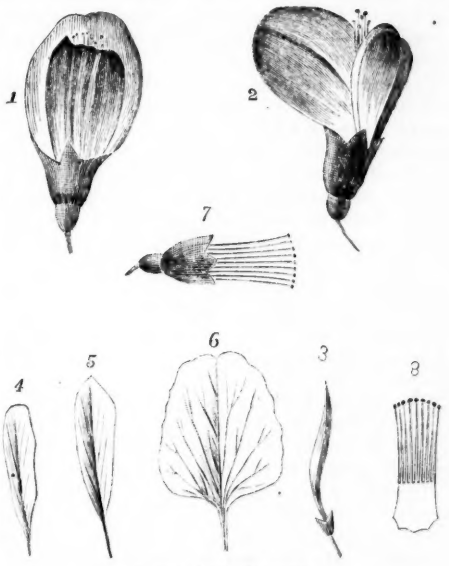
not develop at the same rate as the flower, and hence the lower bracts appear smaller than the upper ones. The common peduncle is bare of flowers at the base for about a third of its length. The flowers are purple, papilionaceous, measuring 2½ to 3 centimetres without the claw, which is about ½ centimetre long. The



Leaf of *Andira Araroba*, showing its venation, natural size.

calyx is gamosepalous, 2 centimetres long, covered with rusty-colored hairs, a little flattened on three faces like a triangular prism with rounded angles, the dorsal angle being the more prominent and corresponding to the middle of the standard. The calyx is five-toothed, the two upper teeth being larger and longer and separated by a more obtuse angle than the other three, which are equal and of which two correspond in position to the wings of the corolla and the central one to the keel.

The *corolla* consists of five-clawed petals, the standard being entire, orbicular, about 2 centimetres in diameter, slightly emarginate at the apex, and furnished with a claw about ½ centimetre long, and consisting in great part of the thickened middle vein of the standard. The



Flower of *Andira Araroba*.
1. Showing three lower teeth of calyx; 2. Corolla, lateral view; 3. Pistil; 4. Petal of keel; 5. Petal of wing; 6. Standard; 7. Stamens in situ, after removal of corolla; 8. Monadelphous stamens, separated from calyx.

alæ or wings are obovate, elongated, about 16 millimetres long by 6 broad, curved towards the base, and forming a longitudinal and oblique sinus* (gotteira) near the top of the claw on the side opposite to the standard, the claw being about 7 millimetres long. The two petals forming the keel are similarly formed, but less curved, and 4 or 5 millimetres broad. The *stamens*, nine in number, are monadelphous and perigynous, about 2 centimetres long, and adherent for about a third of their length, but having a slit opposite to the middle of the vexillum. The anthers are ovoid with a longitudinal furrow on their inferior surface, in the middle of which the filament is inserted. The upper surface is convex and smooth. The *pistil* consists of a single carpel, and exceeds the stamens in length by 1 or 2 millimetres. The ovary, which has a stalk about 4 millimetres long, is flattened at the sides, and presents two salient lines or rudimentary wings.

* This is not well shown in the original wood-cut.

The ovary and style (the latter for two-thirds of its length only) are covered with rusty hairs. The ovary is convex on the side opposite to the slit in the androphore, and concave on the side nearest to the two lateral wings.

The ovary is one-celled and one-seeded. The embryo is curved, and the seed exalbuminous. The arillus is short and tortuous.

From the above description it will be seen that the araroba plant belongs to the Leguminosæ, and to the tribe of Dalbergieæ. It much resembles in some characters *Dalbergia miscolobium* Benth., and *Andira fraxinifolia* Benth. Neither of these two plants, nor the *Andira inermis*, has the obtuse emarginate leaflets which characterize the araroba tree.

The author believes the plant to have been hitherto undescribed, and proposes the name of *Andira Araroba* Aguiar, for it, since the drupaceous fruit, panicled inflorescence, purple flowers, and the other characters above mentioned clearly point to its being an *Andira*. This opinion is further strengthened by the fact that some other Andiras possess parasiticidal properties, and that the natives who call the *A. anthelmintica* "Angelim de folha grande," the *Andira fraxinifolia* "Angelim doce," and the *A. stipulacea* "Angelim Coco," also call the *A. Araroba* "Angelim Amargoso," thus recognizing a close alliance in the plants.

With regard to the production of the araroba, the author gives it as his opinion that it is formed by the oxidation of the resin which exists in great abundance in the tree, the oxidation being facilitated by the canals made by insects. He explains the presence of the larger cavities in the tree by the corrosive action of the araroba on the wood. He has not, however, as yet confirmed his theory by experiment. The araroba is collected throughout the year, the older trees being selected, because the powder occurs in in them in greater abundance. The trunk is cut into sections transversely, and these are then split longitudinally. The portions containing powder are then chipped or scraped off with an axe, which is done the more easily as the wood in these parts offers but little resistance. The color when freshly collected varies from that of the flower of the cotton plant (pale primrose color), becoming by the action of the air darker, to that of rhubarb, and finally dark-purple. The commerce of this article is now chiefly developed in Camamu and Taperoa, although the tree exists in abundance in all the southern part of the province of Bahia and, according to Drs. Bomfim and Agnello Leite, also in the forest of Sergipe. The tree is not cultivated, but propagates itself spontaneously.—*Pharm. Journ. and Trans.*, July 19th.

The Seventh Cincinnati Industrial Exhibit is to be opened on the 10th of September, goods being received up to the preceding day. This Exhibition is becoming not only useful but popular.

[Original Communication.]

RESIN OF PODOPHYLLUM.

BY J. U. LLOYD.

The formula of the U. S. Pharm. may be quoted, in a condensed form, as follows: 16 fl. oz. of finely-powdered may-apple root are to be moistened with 4 fl. oz. of alcohol, to be packed in a percolator, and 12 more fl. oz. of alcohol to be added. When the liquid begins to drop from the orifice, the latter is to be corked, the percolator to be covered, and allowed to stand in a warm place for four days. Then the percolation is to be allowed to proceed, and enough alcohol is to be poured on to obtain 24 fl. oz. of percolate, or until the percolate ceases to produce turbidity when dropped into water. The alcohol is to be distilled off until the residue measure 6 fl. oz., and the latter poured, under stirring, into seven pints of water, containing 2 fl. oz. of muriatic acid. The precipitated resin is to be washed by decantation, strained, pressed, and dried by a gentle heat.

Of the process for percolation it is unnecessary to speak, as without doubt the committee in charge of that department* will give the subject every attention. I may be pardoned, however, if I say that, with proper attention to fineness of powder and packing into the percolator, my experience is that twenty-four fluid ounces of percolate from sixteen troy ounces of podophyllum is an overabundance, as the bulk of the extractive matter is carried through by the first half of the percolate, and, after sixteen fluid ounces have passed, the yield of resin is not sufficient to repay the loss of alcohol. A very small amount of resin of podophyllum dissolved in alcohol will render water turbid, and when this test is recognized, an excessively large amount of alcohol may sometimes be used, especially when the act or percolation is faulty.

Again, when sixteen troy ounces of may-apple are moistened (with 4 fl. oz.), and prepared for percolation, the remainder of the sixteen fluid ounces of alcohol (12 f. ℥) will not reach the bottom of the powder, as the directions lead us to expect. Therefore, to make the liquid drop from the percolator, we must increase the menstruum, according to my experiment, until the entire amount of alcohol equals about twenty fluid ounces. It may be well to remember that the loss by evaporation will be the same whether the surface of the powder is simply covered or deeply covered, and that time and subsequent trouble from fissures or channels through the material within the percolator, may be saved by adding all the alcohol at the commencement. For the production of sixteen fluid ounces of

* Mr. Lloyd refers to the Committee on Fluid Extracts, which is a section of the Committee on the Revision of the U. S. Pharm., appointed by the Amer. Pharm. Association. The above and similar papers are published particularly with a view to elicit criticism and perhaps suggestions from others.—Ed. New Rem.

percolate, the amount necessary will be about thirty-six fluid ounces.

It has been repeatedly stated that muriatic acid precipitates berberine from tincture of podophyllum—a point that I have never succeeded in verifying when the podophyllum root was free from *Hydrastis Canadensis*, with which the commercial article is often contaminated.

So-called resin of podophyllum is soluble to some extent in water, as the experiments of Professor Maisch and Mr. Power have demonstrated. It is not quite as soluble in acidulated water.

Muriatic acid has the power of curdling podophyllum resin even in the presence of considerable alcohol. From this reason only can I find a use for it in preparing the resin, and if the proportions of alcohol and water are properly adjusted, there is no necessity for any acid. There is little trouble in following the present officinal directions for precipitating resin of podophyllum, and in a small way, perhaps, in this respect, the formula is all-sufficient. However, in another respect it is faulty, for resin of podophyllum *should* be dried in a *cool place*, instead of "with a gentle heat."

Again, the average yield is about forty pounds from one thousand pounds of may-apple.

If we apply the officinal formula to these proportions (a convenient working batch), we will be compelled to use eight hundred and seventy-five gallons of water as a precipitant, which is altogether out of proportion to actual requirement, and is expensive from the fact that the resin will dissolve in water, and extra work is required. I find in practice that sixty gallons of water, or even forty, will precipitate the resin from such a batch, *without the use of acid.* The overlying liquid will be clear, and the resin light and friable; but the tincture must be evaporated until the residuum is *far less* than the proportion of six fluid ounces from each sixteen troy ounces of podophyllum.

As the tincture can only, by the U. S. P., be reduced to the measure of forty-seven gallons (nearly), we thus have the loss of something near thirty-five gallons of alcohol in the production of forty pounds of resin, aside from loss by evaporation, etc., which, for an article as cheap as resin of podophyllum, amounts to considerable.

Inasmuch as few will desire to work so small an amount as sixteen troy ounces of podophyllum, and as even a moderate increase renders the working formula unwieldy, would it not be well to so alter the process so as to admit of a more practicable increase of quantity? This may be accomplished by remembering that, if the tincture from sixteen troy ounces of root be evaporated to the consistence of syrup, and poured into *cold water* with constant stirring, sixteen ounces of water will answer.

Muriatic or other acid is only of use in presence of excess of alcohol.* This can readily be demonstrated by following the present officinal process, leaving out the acid, when the mixture will be translucent, and the resin will separate very imperfectly. If acid be now added, at once the resin will curdle. If the process be repeated, and instead of to six fluid ounces, the tincture is evaporated to the consistence of honey, the precipitation will be complete *without acid;* however, the acid is of no particular disadvantage, and may well remain. Upon the other hand, if the evaporation of the tincture be carried beyond the point I have named, and the residuum reduced to the consistence of a soft extract, it will fall in a mass when poured into water, will dry slowly, and yield an inferior preparation. Therefore, precaution must be observed that the evaporation be not carried to extremes. In actual practice, those accustomed to making this preparation conduct the distillation until, as it is termed by workmen, "the still begins to breathe," at which point the distillation proceeds intermittently, accompanied by an increase and decrease alternately of the stream of alcohol and regular expulsions of vapor, very much resembling labored breathing. When this occurs, the contents of the still will be found of the proper consistence.

If the foregoing remarks are favorably considered by the revisers of the U. S. Pharmacopœia, the changes of process will, outside of percolation, simply be the reduction of evaporation or distillation of the percolate to the consistence of honey (three fluid ounces at outside), precipitation by pouring with constant stirring into sixteen fluid ounces of water previously reduced to a temperature below fifty degrees F., and subsequently drying the resin, after collection, upon a strainer by exposure to the atmosphere *in a cool place.*

CINCINNATI, O., June 10th.

Chlorine Apparatus.

IF it is desired to generate an abundant and steady supply of chlorine on short notice, the usual method of preparing it from manganese dioxide and hydrochloric acid, or sulphuric acid in connection with common salt, may be much simplified by substituting chloride of lime for the manganic oxide. An ordinary, large, well-pitched wooden cask may be used as generator (see cut). A hole is made near the bottom, and fitted with a plug, *a*, so that it may be easily emptied. In the top a square hole is cut, from which an earthenware jar is suspended by means of the leaden straps, *b*. The square hole is closed with a perforated piece of wood, through which a leaden pipe, *c*, is placed, reach-

* The use of muriatic acid, if I remember aright, was first publicly recommended by Dr. E. R. Squibb, and without this addition the *present* formula of the pharmacopœia would be a failure.

ing to the bottom of the earthen jar. The bottom of the pipe is partly cut away, so that liquid can run freely through it. A funnel is also fitted to the top of the pipe. Through another perforation in the top of the cask a bent leaden pipe, *d*, is fitted, to serve as a delivery tube. This passes to a stoneware Woulff's bottle. In using this apparatus, hydrochloric acid is poured into the cask. The necessary amount of chloride of lime is then mixed with water in a tub, so as to form a creamy fluid. This is then passed through the funnel into the hydrochloric acid by degrees, and according as the chlorine is wanted in a rapid or slow current, the chloride of lime is added quick or slowly. This process does not work well if the chloride of lime is placed into the cask and the hydrochloric acid added, on account of the greater density of the chloride of lime. One advantage of this method of generating chlorine is, that the amount can be easily regulated by the chloride of lime added. Of course, this is a comparatively expensive method of preparing chlorine, but, owing to its ready execution, will often be found advantageous to use.—*Scient. Am. Suppl.*, No. 187.

The best Form of Wash-Bottle.

THE old style of Woulff's washing bottles, with two or three necks, is no doubt familiar to most of our readers. We have had occasion, however, of late to convince ourselves that certain improved forms of chemical apparatus do not appear to be as generally known as might be supposed. We shall, therefore, as occasion offers, endeavor to draw attention to such apparatuses as may be thought useful to our readers. At present we wish to illustrate two improved wash-bottles, one of which is known as Drechsel's, the other as Whitall, Tatum & Co.'s.

Drechsel's wash-bottle consists of a bottle with a ground-neck, in which sits a globular, hollow stopper, containing all the requisite tubes for constituting a wash-bottle. The gas enters on top of the stopper, by the bent tube which passes entirely through it and to nearly the bottom of the bottle. When issuing from the liquid, the gas passes into the hollow stopper and out at the lateral bulb-tube. The bulb is attached for the purpose of retaining any spray or drops which may be mechanically passed upwards.

Perhaps the best form of wash-bottle is that made and sold by Whitall, Tatum & Co. It is of the same shape and construction as the handsome specimen-jars which this firm has placed upon the market The opening is made air-tight by a rubber ring placed between it and the upper edge of the neck of the bottle, and by means of a screw cap, which may be removed or replaced at an instant's notice. The top is perforated with holes, which carry the requisite connections as well as a funnel. The latter also acts as a safety-tube.

Stop-cock of easy Construction.

TAKE two glass tubes, one of which slides easily into the other, close the end of the smaller tube in the flame of a Bunsen's burner, and make an opening about an inch from the closed end, by filing crosswise with a rat-tail file. Connect the two tubes by a piece of rubber tubing, which should fit the smaller tube closely, and the stop-cock is complete. When the smaller tube is pushed into the larger one, the cock is open;

Fig. 1.

Fig. 2.

when shoved back into the rubber tube, the opening in the small tube is covered by the rubber wall, and the passage of liquids or gases prevented. The accompanying figures make this clear. Fig. 1 represents the cock open. Fig. 2 shows the cock closed.—EDWARD HART in *Scient Am. Suppl.*, No. 186.

The Eucalyptus.—On the line of railroad between Los Angeles and Anaheim, about 180 acres have been set out with eucalyptus, containing over 80,000 trees, and more than half of them are now from fifteen to twenty feet high. The young tree has been produced in California during the past year in greater abundance than ever, and sold by the nurserymen at much lower prices, with a greatly increased demand. Like many other novelties, the cultivation of the eucalyptus has been subject to much fanciful discussion, and its good effects doubtless somewhat exaggerated. But on the evidence we have heretofore published from time to time of the salutary effects which have followed its culture in Algeria, the Pontine, and other marshes, there seems to be no question. New Orleans and thereabouts would seem to be a specially inviting region for its introduction.—*The Sanitarian.*

Quinia Abroad.—Foreign exchanges note a speculative rise in the price of quinia, based upon the prospective demand for the United States Market.

[ORIGINAL COMMUNICATION.]

MISCELLANEOUS CONTRIBUTIONS FROM THE ORIENT.

BY PROF. XAV. LANDERER.

YEARLY PRODUCTION OF RAISINS.—The total yearly production of raisins in Europe, Asia Minor, and Persia is estimated to be as follows:

Greece	1,345,000	cwt.
Turkey	470,000	"
Persia	160,000	"
Italy	200,000	"
France	100,000	"
Spain	850,000	"

The best sort of Spanish raisins are those from Malaga grapes, the annual yield of which is estimated at 400,000 cwt., of a value of over 100,000,000 francs.

HYDROPHOBIA REMEDY.—Upon the island of Salamis, there is a monastery called *Panagia Phaneromene*,* which has from olden times been in possession of a remedy against the effects of the bite of rabid dogs, or poisonous snakes. Professor Landerer writes to us that this remedy is in high repute and universally believed to be effective. Indeed, he himself appears to have some faith in its efficacy. In his commentary to the Greek Pharmacopœia, he describes it under the name: "Pulvis antilyssicus monasterii Insulæ Salamis," and states that it consists of the powdered root-bark of *Marsdenia erecta* R. Br. (=*Cynanchum erectum* L.) 10 grains, and powdered oriental cantharides, ½ to 1 grain. The monks apply also a cautery, namely a moxa composed of wool and mastic, and keep up the suppuration for a long time.

ORIENTAL HAIR-OILS.—The oil expressed from the fruits of the wild olive† (*ἀγριελαία* agri-elaia) contains so much stearin that it congeals, at the least exposure to cold, to a butter-like mass, which is used in the orient as a substitute for butter in cooking. This fatty oil, —*ἀγριελαιόλαδον*, agri-elaioladon—has the reputation of promoting the growth of hair, being largely used, especially by women and children, for anointing the scalp. At the same time they have learned to cleanse the scalp and hair with a saturated decoction of the root of Levant Soapwort (*Saponaria officinalis* L.). The latter is an effective remedy for pityriasis, which is often the cause of the falling out of the hair.

The oil of the fruits of *Laurus nobilis* L., Laurel (termed *δαφνόλαδον*, daphnoladon), is likewise a favorite application for the same purposes.

A still better agent is considered to be a preparation made by females upon the island of Zea, from the cups of the holm oak (*Quercus Ægilops* Willd.), the so-called vallonia, and the red astringent wine of Zea. This is aromatized with fresh laurel-leaves, cloves, and cinnamon. Prof. Landerer, who adds his own testimony as to the efficacy of this compound, states that he has named this compound "Sositrichon" (*σωσίτριχον*, from *σώζω* (*σώνω*), to preserve, and *τρίχα*, the hair.)

ON THE EMERY OF NAXOS.—The Greek Government has the monopoly of the sale of the emery (*Ger.*, Smirgel; *Greek*, *σμυρίς*; *Ital.*, smiriglio) which is mined in the island of Naxos. The annual production amounts to about 40,000 cwt., which are sold for 12 drachmas* and 55 leptas per cwt., and therefore realize 502,000 dr. The cost of mining, which is done on a ten years' contract, and of the transportation to the sea-coast, amounts to 2 dr. 75 lept. per cwt., or altogether to 110,000 dr. Hence the government makes a profit of 392,000 dr. ($75,656) annually. The emery of Naxos is considered as a superior variety, and is almost free from iron. To test emery as to its comparative hardness, on which its value depends, a certain quantity of it is triturated in exactly weighed glass-vessels, until it ceases to attack the latter. From the loss of weight of the glass vessels the value of the emery is determined.

Cod-Liver Oil Emulsion.

COD-LIVER oil emulsions in various forms are preparations which have of late become somewhat popular. I express no opinion whatever on any of these preparations, far less do I intend to individualize any preparation by attempting to give a copy of the formula. I simply recognize the unfortunate necessity which sometimes arises of following where our inclination does not lead, and I therefore give a formula for an emulsion, believing it without prejudice equal to any of the many now bulking so largely before the profession and the public.

Of all the excipients suggested by different authorities, as well as commending themselves to one's own approval for emulsifying cod-liver oil, none, I think, equals gum tragacanth. Without, therefore, ignoring other substances, such as mucilage of gum-arabic, white of egg, alkaline solutions, and so on, I have principally endeavored to ascertain the conditions most favorable to produce with tragacanth an inseparable emulsion, which at the same time would be miscible with water, contain a reasonable amount of oil, and be not particularly objectionable in appearance, taste, or smell. Of course, in all these preparations much may be left to individual fancy as to combination, and I therefore make no suggestion as to all the different ingredients which may be "hotched potched" into it further than this, that if oil of bitter almonds be the flavoring agent employed, the emulsion need not

*Παναγία ("the holy Virgin") φανερωμένη ("who has appeared").

† *Olea Oleaster* Hoffm. et Lk., at present included, with *O. sativa* Hoffm. et Lk., under *Olea Europæa* L.

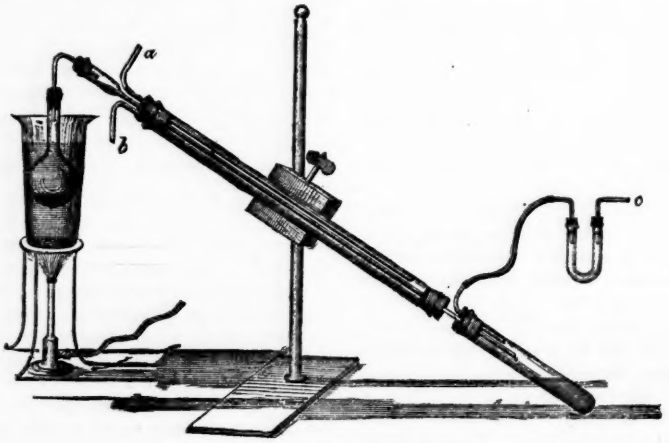
* 1 drachma is equal to 1 frank, or to 19.3 cents of our money. 100 leptas are equal to 1 drachma.

be spoiled by the addition of an extravagant excess of the bitter almond. Experience and experiment both have determined that a half per cent, or about two drops to each ounce of cod-liver oil employed, is the proper proportion, and that of the two oils, namely, an oil deprived of its hydrocyanic acid, or an oil containing it, the latter is much to be preferred.

As to the emulsion, let three drachms of the finest white powder of tragacanth be rubbed up in a large mortar with three ounces of glycerin. To this add as much boiling water as will convert it into a thick transparent jelly, from eight to ten ounces probably being required. After cooling add the cod-liver oil, which should first be mixed either with plain water or lime-water in the proportion of one of the latter to three of the oil; or if, as is customary, the emulsion is intended to contain the hypophosphites of lime or soda, let these be added to the plain water previous to mixing with the oil, and then let this primary emulsion be gradually added to the mucilage of tragacanth with constant stirring. In the process of mixing, the emulsion not only creams, but also thickens up to a certain point, and individual taste must settle the extent to which the mixture may be carried. I have found the three drachms of tragacanth emulsify from 50 to 80 ounces of what I have called the primary emulsion, the former quantity being very thick and not easily poured from the mortar, the latter quantity flowing more freely and forming what I consider the better emulsion. In mixing the oil with the mucilage of tragacanth care must be taken not to add it too hurriedly else it will not emulsify. The mixture will simply break up into a clotted mass and no amount of labor apparently will bring it back to the emulsified form. Under these circumstances the better way is at once to begin again with a small quantity of fresh mucilage, to which the clotted mass should be carefully added by degrees. In this way only can the emulsion be brought back to its proper form.—WILLIAM GILMOUR, in *Pharm. Jour. and Trans.*

Estimation of Acetic Acid.

THE usual method of estimating acetic acid in wines consists in distilling the latter to nearly dryness and repeating the operation four or five times, after having restored each time the original bulk of the wine with water. This method, however, consumes much time and is generally attended with loss. Dr. L. Weigert, therefore, proposes a modification, which appears to remedy these defects, and which at the same time makes the method applicable to any kind of liquid containing free acetic acid. The method consists mainly in aspirating the vapors given off during the distillation by means of a vacuum pump. 40 or 50 cc. of the liquid (wine, etc.) are placed into a long-necked flask of the capacity of 220–250 cc. This flask is connected by a rubber stopper and glass-tube with the condenser, which latter is supplied with cold water through *a*. The condensing tube is connected with a strong-walled test-tube in such a manner that the end of the condensing tube, which passes through a rubber-stopper, projects for some distance into the test-tube. The latter is previously gauged in the exact slanting position which it will have during the progress of the distillation, and is provided exteriorly with a mark corresponding to 40 or 50 cc. The flask is heated by immersion to the neck into a water-bath made of copper, of the shape shown in the cut, and filled with a saturated solution of sodium chloride, which boils at 109° C. (=228.2° F.). The test-tube finally is furnished with a second glass tube which communicates with a vacuum-pump [for instance,



Apparatus for Estimation of Acetic Acid.

such a pump as has been illustrated in our July number, p. 206]. After the air has been rarefied by means of the pump, and heat has been applied to the water-bath, it requires but a few minutes to drive over the whole of the liquid, by drops, into the gauged test-tube. As soon as this has taken place, or at least when near this point, the flask with condenser is lifted up, so as to remove the former from the water-bath, and the test-tube is gradually detached by careful twisting. The contents of the latter are transferred to another vessel, in which the liquid is finally titrated. To the residue in the flask sufficient water is added to restore the original bulk, and the contents are again distilled in the same manner. This is repeated three times more. The whole operation takes up about three-quarters of an hour. The results are very close, according to the figures adduced by the author. [To judge from a remark of the latter, he appears to use litmus as an indicator, and recommends to titrate until the *blue* tint appears. We would, however, recommend to use phenolphthalein, instead of litmus, in this case, because in a *colorless* and purely *acid* liquid phenolphthalein permits an almost absolute accuracy, the change from colorlessness to red being sudden and decided on the addition of the most minute excess of alkali.*—Ed. N. R.]—From *Zeitsch. f. anal. Chem.*, 1879, 207.

On Scoparine and Sparteine.

Increased attention having been recently directed in Germany to the diuretic properties of an old popular remedy, the broom (*Sarothamnus Scoparius* Wimmer), Mr. E. Merck, of Darmstadt, was induced to prepare a quantity of the two bodies, scoparine and sparteine, discovered in the plant by Stenhouse, in 1851, and described by him as its active principles, and to submit them to Dr. Fronmüller for therapeutic experiment. The results obtained are described in a paper in the *Heilbronner Memorabilien*, 1878, Heft 12.

Scoparine was obtained in the form of a fine yellow powder, in which under the microscope isolated acicular crystals can be seen. It is sparingly soluble in cold water, more freely in boiling water, whilst it dissolves readily in alcohol and glycerin. With alkalies, on account of the weak acid properties of scoparine, no constant neutral compound can be obtained. The best form for its administration is a subcutaneous injection in doses of 0.03 to 0.06 gram (½ to 1 grain). For this purpose it is dissolved in water either with the addition of glycerin or a trace of ammonia. 0.03 gram (½ grain) of scoparine, 1 gram (16 min.) of water, and a small addition of ammonia give a suitable solution for one application. For a glycerin solution, the proportions are: 0.06 gram (1 grain) scoparine; 0.75 gram (12 min.) water; and 0.25 gram (4 min.) glycerin. The ammoniacal solution causes the least pain. Whilst the above doses administered subcutaneously produced a strong diuretic action, when administered by the mouth, to produce equal results, the doses require to be increased to 0.5, and even 1.0 gram. This is possibly due to the sparing solubility, and may indicate the necessity of experiments in the direction of an ammoniacal solution for internal administration. No injurious effects upon the digestion have been observed.

The second body, sparteine, occurs in the broom in much smaller and very variable quantities. In the pure condition and freshly prepared, it is an almost colorless oily liquid, which when exposed to light and air rapidly becomes colored yellow to brown. It possesses a peculiar smell, recalling that of hyoscyamine, and a very bitter taste. It has no action on the pupil of the eye. In water it is insoluble, but dissolves in alcohol. It gives the characteristic alkaloid reactions, has strongly basic properties, and forms with acids crystallizable salts, readily soluble in water. Of these the author has principally prepared the sulphate, in the form of a white powder showing crystals distinctly under the microscope. There is no difficulty in preparing larger crystals, since the author has obtained them one centimetre in length, but he considers the small crystalline form presents advantages in the preparation of a pure compound and in dispensing. The crystals belong, so far as can be determined, to the monoclinic system. The pure sparteine being, as above mentioned, a very sensitive and alterable body, the author thinks the sulphate will be found more suitable for administration, its ready solubility in water also favoring its subcutaneous injection.

Although the experiments with this salt have not been numerous, they have shown that neither its internal nor subcutaneous administration produces unpleasant accidents or smarting, whilst its diuretic action was considerable. An aqueous solution was used, of the strength of one part of sulphate of sparteine to fifty of water and of this the internal dose was 30 drops (= 0.04 gram or ⅔ grain of the salt) and the subcutaneous 1 gram (= 0.02 gram or ⅓ grain of sparteine.—*Pharm. Jour. and Trans.*, June 28th.

Query.—The *Louisville Medical News* publishes a query of general interest. Will any of our readers furnish answers? "A physician has a pocket-case containing twelve two-drachm vials, which he wishes to fill with medicines which would be most likely to be of service in ordinary practice. With what should he fill it? (N. B. In replying do not give the drug simply, but the preparation—*e. g.*, not mercury, but calomel—in whatever the preparation preferred.)"

*Caustic alkalies are preferable for tritration to the carbonates, since it has been found that under certain conditions carbonic acid, or rather the presence of bicarbonates, interferes with the delicacy of the reaction.

[Original Communication.]

ON HYDRANGEA AZISAI.*

BY WALLACE TAYLOR, M.D.

Hydrangea Azisaï, Siebold and Zuccarini, is a beautiful bush, belonging to the natural family of Saxifragaceæ. The large corymbs all come out into full bloom at the same time, covering, and in some cases completely hiding the whole bush. The petals are first of a reddish or pinkish-blue, fading to a soft light-blue when fully blown, and finally pale to a soft white tinged with blue. I saw the bushes for the first time last summer, while on a medical tour to the north of lake Bewa. None of the bushes I saw were over six feet in height, and yet I am told they sometimes attain a height of twelve to fifteen feet. Those which I saw were cultivated in gardens for the beauty of their flowers; the owners being ignorant of their medical properties.

The flowers of this species of Hydrangea were formerly much used and held in high esteem. But the Japanese physicians, with the exception of those who still adhere to the old Chinese school, use them now but seldom. They were valued as an antiperiodic in malarial fevers. The remedy was exhibited in form of infusion, made from three to five corymbs, according to the size, in some ten or twelve ounces of tepid water, the whole of which the patient had to drink in the course of the day in divided doses. This is said to have been equal to two or three grains of quinine taken twice a day. It occasionally arrested the malarial fever; but the alkaloids of Peruvian bark have now so superseded it that it is scarcely ever used. It was also given as a tonic, where quinine or gentian would be employed now, and was besides administered in such complaints which were supposed to have a malarial character, in consequence of symptoms of periodicity.

Osaka, Japan.

Alum in Baking Powders.

In a recent issue of the *Scientific American Supplement* will be found a communication from G. E. Patrick, Professor of Chemistry in the University of Kansas, giving details of a series of practical tests to determine whether the hydrate of alumina is dissolved by the gastric juice. The question has a vital bearing on the discussion as to the safety of using alum in baking powders. Professor Patrick attacks it without prejudice, by strictly scientific methods, and arrives at results which are certainly gratifying in view of the wide use of alum powders in our kitchens.

Professor Patrick takes his text from the published opinion of a prominent physician, who says, after stating the difficulties attending a thorough mixture of the ingredients of alum baking powders:

"But even if the exact proportions were maintained, the salts formed would retain their injurious properties, as they would dissolve in the gastric juice. The gastric juice contains not only lactic acid, but a large amount of hydrochloric acid, and both the sulphate and hydrate of alumina would be dissolved."

After testing by reference to authorities the statement that the gastric juice contains a large amount of hydrochloric acid, and finding the weight of evidence to be that the quantity is in reality extremely minute, and that little not free, Professor Patrick proceeds to describe his examination of the practical question whether the hydrate of alumina as it exists in bread after baking, when made with alum powders, will be dissolved in the fluids of the alimentary canal.

This question could be determined only by careful tests with living animals. Professor Patrick found cats to be most available. Having made biscuits with an acknowledged alum baking powder, using twelve times the proportion of powder directed on the labels, and employing for each experiment a distinct sample of powder, he fed the biscuits to cats that had fasted from one to two days. The amount eaten in each case was enough to give at least half a teaspoonful of powder to each experiment. After allowing for digestion 20 minutes, 45 minutes, 1½ hours, 2 hours, and 2½ hours, respectively, the cats were killed, and the contents of the stomach and small intestines were carefully examined for dissolved alumina. In each case undissolved hydrate of alumina was found, but of dissolved alumina there was never a trace.

Surprised at the uniformity of these results, and thinking that the organic matter of the flour might have interfered with the solution of the alumina or his detection of it, Professor Patrick made two crucial experiments. In each, two teaspoonfuls of the powder were mixed with water and baked at the ordinary temperature of the oven. The mass was then fed to a cat (under compulsion) and after a specified time the stomach and intestines were examined as before. In neither case was a trace of dissolved alumina discovered.

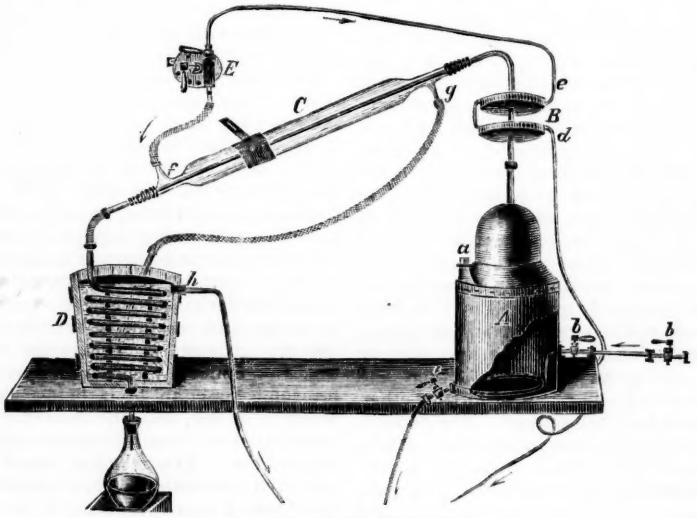
Similar experiments were then tried with unbaked (gelatinous) hydrate of alumina, and in these cases a trace of dissolved alumina was found; the inference being that it is not safe to eat dough made with alum powder—it should always be baked. Another important practical

* We have some time ago received from our friend, Dr. Wallace Taylor, a large and handsome specimen of the flowering tops of this bush. From his notes we have selected those portions which might be of interest to our readers.

According to Siebold, the Chinese name of this shrub is *zu-hats-sen*, and there exists a variety with golden-yellow spreckled leaves, which is called by the Japanese *Fuiri azisai.—Abhandl. d. K. Bayr. Akad. d. Wiss.*, XIV., 2, 689.

point was also suggested—namely, that if bread is carelessly mixed or with insufficient water, some of the powder may remain dry and the alum not changed to the hydrate; in which case the effect would probably be injurious.

In order to test this question, and also to furnish a check on the other experiments with biscuits, Professor Patrick had a batch made in which the mixing was less thorough than usual and with less water. These were fed to cats, and subsequent tests developed in every case a trace of dissolved alumina. These experiments, while proving the reliability of those first described, go to show, Professor Patrick thinks, that to insure the entire absence of alum in the bread, the mixing must be done with plenty of water. As a simple precaution it might be well to mix the batter too thin at first, and stiffen it by the addition of pure flour.



Behrendt's Distilling Apparatus.

Tests of this nature are obviously worth any amount of theory; and if there is no radical difference between the gastric juices of cats and men, it seems to be conclusively established that alum baking powders may be used without injury to health.

A New Distilling Apparatus.

THE apparatus illustrated above was devised by P. Behrendt,* for the rapid determination of alcohol in fermented liquors or in mash; but it is also applicable to the distillation of easily volatile liquids in general, and offers some new features which might be of advantage in particular cases.

The copper-boiler, *A*, has a capacity of about two gallons, and has a lateral opening, *a*, through which the liquid to be distilled is introduced, to the amount of about one-half gallon. The lower chamber, underneath the boiler, contains a circular tube perforated with numerous small holes, through which steam is allowed to issue by turning the stop-cocks, *b*, *b*. As soon as vapors begin to rise, the latter are first passed through the two flat, circular, hollow brass-chambers, *B* (called Pistorius' pans*), where they lose the greater portion of their water, and from there pass into the Liebig's condenser, *C*, where they are almost wholly condensed. To prevent, however, any escape of uncondensed vapor, an additional condensing-worm, *D*, is attached from which the liquid drops into the flask below. By turning the upper faucet at *E*, a small stream of water is allowed to flow to the Pistorius' pans, and this is so regulated that on flowing out from *d*, the water is hot. The water supplying the condensers passes first into the lower part of the Liebig's condenser at *f*, issues at *g*, and then supplies the worm below, whence it finally flows off through the pipe *h*. The contents of the copper-boiler are drawn off through the faucet *c*.

When estimating the amount of alcohol in any given sample of mash or liquor, two litres of the latter are introduced into the still, and heat is applied until nearly one litre has distilled over into a litre-flask placed under the worm. The latter is then filled up to the mark with distilled water, and the amount of alcohol determined by means of the alcoholometer. Of course, the resulting number is to be divided by 2.—*Dingler's Pol. Journ.*, 232, p 421.

* In Zeitschrift f. Spiritusindustrie, 1878, p. 216.

* In German: Pistorius' Becken.

The Assay of Spiritus Ætheris Nitrosi.

DR. A. DUPRÉ has lately published his method for determining the strength of Spiritus Ætheris Nitrosi. It is that described by Duflos,* with improvements by the author. Dr. Dupré states that, in his experience, the percentage of true nitrous ether in the officinal preparation of the Brit. Pharm. amounts to about 3 per cent. Besides the usual characteristics given by the pharmacopœia, the author adds that it should give no precipitate with silver nitrate, showing absence of hydrocyanic and formic acids. A small quantity poured on a little water and ignited, should leave an aqueous solution which gives no precipitate with silver nitrate, showing absence of hydrochloric ether, chloride of ethylene, etc. The assay is performed as follows:

10 cc. of the ether are introduced into a small flask already containing about 1.5 grams of solid potassium hydrate. The flask is closed with a well-fitting cork, gently agitated from time to time to promote solution of the potash, and left standing over night. Next day the contents of the flask, more or less yellow according to the amount of aldehyde present, are washed into an evaporating basin with 50 cc. of water, and the mixture evaporated on a water-bath to about half or one-third. The remainder is allowed to cool, filtered through a little glass wool into a beaker made up to 300 cc. with water, 50 cc. of diluted sulphuric acid (1 in 4) are added, and the nitrous acid present determined by a standard solution of permanganate. This standard solution is prepared by dissolving 8.475 grams of pure permanganate of potassium (or its equivalent); 1 cc. of this solution is equal to 0.01 gram of nitrous ether, and therefore indicates 0.1 per cent of nitrous ether, if 10 cc. of ether have been taken. The decoloration of the permanganate is rapid at first, gradually becoming slower. As soon as this is perceived, not more than 0.5 cc. are added at a time, and the process must be considered as at an end if the solution still shows a distinct pink or red coloration two minutes after such addition. For every cubic centimetre of permanganate solution then used, the Spiritus Ætheris Nitrosi contains, at a maximum, 0.1 per cent of nitrous ether. The solution still continues to decolorize permanganate, though but slowly, and much more will have to be added before the colorization becomes permanent. I have, however, convinced myself by many experiments that all nitrous acid present is oxidized when the above indicated point is reached. No doubt, other substances are oxidized as well, and the process indicates more nitrous ether than is actually present; but as the error is on the side of leniency, it is perhaps an advantage rather than otherwise. By following out strictly the directions here given, it will be found that duplicate analyses of a sample rarely differ more than 0.1 per cent from each other; while with poor samples the agreement is even more perfect. Should a sample require much permanganate, and the solution, instead of becoming colorless, remains brown or yellow, more sulphuric acid must be added.—

Another method is given by Dr. John Muter, who considers his process to have some advantages over that of the previous author. It requires two solutions.

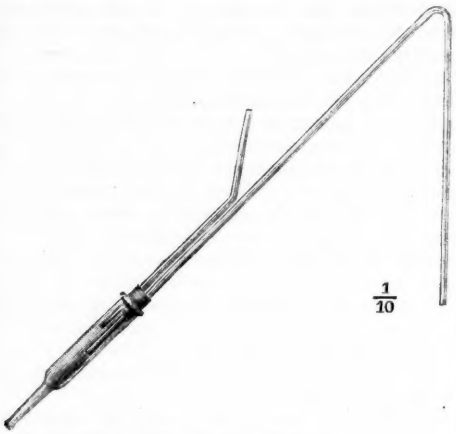
(1) Decinormal solution of hyposulphite of sodium (sodium thiosulphate), made exactly according to the directions of the British Pharmacopœia, each cc. of which = .0127 free iodine.

(2) Solution of potassium permanganate, containing 3.175 grams per litre, and checked to balance the "hypo" solution, by adding excess of saturated solution of potassium iodide to 100 cc., and then seeing that the iodine set free exactly requires 100 cc. of "hypo" for complete decolorization, starch paste being added as an indicator towards the end of the process.

First take the specific gravity of the sample at 60° Fahr., and then measure out 10 cc. of the spirit for analysis. Digest this with sufficient potassium hydrate in a small strong glass flask, closed by a cork, through which passes a bent delivery tube, dipping under a column of mercury in a test tube, of such a height as will be sufficient to heat gently on a water-bath under pressure without bursting the flask. This point is ascertained by a blank experiment, during which the flask is wrapped in a cover to prevent accident; and once arrived at, the same flask and mercury column are always employed. After digestion under pressure with frequent agitation for some time (an hour being usually ample), water is added, and the contents of the flask evaporated in a basin until no smell of spirit is perceptible. The residual liquid having been rendered *just neutral* with sulphuric acid, is filtered into a flask containing 75 cc. of permanganate solution, previously diluted to 200 cc. with water and acidulatd with 20 cc. dilute sulphuric acid (1 in 3), and the flask having been corked is left for half an hour. At the end of that time excess of saturated solution of potassium iodide is added (which should produce a clear deep orange solution), and the whole brought under a burette containing the hyposulphite solution and titrated: The number of cc. of "hypo" used is deducted from the number of cc. of permanganate put in, and the difference multiplied by .00375 gives the amount of ethyl nitrite in the 10 cc. taken for analysis, and if this be multiplied by 100 and divided by ten times the specific gravity of the original spirit, the answer will be the percentage of ethyl nitrite by weight. In working with spirits of unknown strength, it is advisable to put only 20 cc. of permanganate into the flask at first, diluted and acidulated as directed, and then, if all the color

*Apothekerbuch, 1867, p. 251.

disappears under five minutes, to add 5 cc. more at a time, until a permanent color is obtained, lasting five minutes, when the addition of another 5 cc. will suffice before setting aside for the half hour. In a good spirit it is sufficient to take 5 cc. for analysis, and to use 35 to 38 cc. permanganate.—*The Analyst*, July, 1879.



A Useful Form of Siphon.

SIPHONS, which are to be started by suction, are usually made of glass-tubing with a special suction-tube permanently fused upon the outer leg near its end. This form of siphon, however, is very liable to fracture. A more simple arrangement, which is not as well known as it deserves, is that illustrated in the cut. It does not require special description, except perhaps the additional remark that a flexible rubber tube may be attached to the suction-tube, which will facilitate its use.

Benzin and Benzol.

THESE two terms have often been confounded, and, although attention has frequently been called to their different properties and origin, they are still sometimes used promiscuously, as we have had occasion to notice. The same observation was made by Mr. G. Hofmann, of Dresden, who sent a communication to a late number of the *Archiv der Pharmacie* (June, 1879, p. 519), of which the following is an abstract:

The name *benzin* was first applied to a product obtained from coal-tar. After the introduction of petroleum, however, the low boiling portions of the latter also received this name. Soon afterwards the term "benzin" as applied to the coal-tar product, which had been by this time better studied, was gradually abandoned by chemists, and replaced by *benzol*. Commercial price-lists, however, still adhere to the former custom and quote benzin from coal-tar, and benzin from petroleum.* Now the commercial "benzin from coal-tar" is by no means the pure benzol (C_6H_6), but is a mixture of various hydrocarbons, containing more or less of the latter. It is not likely that coal-tar benzin will ever be used for adulterating that obtained from petroleum, as a glance at the prices quoted in the foot-note will show. Nevertheless it is important to be able to test their identity and purity. Mr. Hofman points out, that, next to the specific gravity and boiling point, the most important criterion is the solubility in alcohol (90%), of which it requires *not less* than six parts (Biltz; Hager says four parts, but this is not correct). Benzol is soluble in one-half to three-fourths parts of alcohol. Another good test is their behavior to iodine. Both liquids dissolve sulphur, phosphorus, and iodine, but benzol alone dissolves asphalt and black pitch. According to Hager, benzin dissolves iodine with a raspberry color. Hofmann describes the tint as more of an aniline red, on account of a slight shade of blue. But the color is characteristic, and is affected by the smallest trace of benzol, being changed to brown-red. A few drops of benzin upon a watch-glass and a minute fragment of iodine are sufficient; tincture of iodine, however, will not answer the purpose.

A further distinction is the formation of nitrobenzol. According to Biltz, forty drops of fuming sulphuric are mixed with ten drops of nitric acid, five drops of the benzin to be examined are added, the mixture is carefully heated under agitation, and after completed oxidation poured out into a porcelain capsule, to allow the nitrous acid to escape, after which any nitrobenzol which may have been formed from benzol, may be recognized by its intense odor. Hager directs to use equal parts of fuming nitric acid and benzin, warms gently, and finally adds water, whereby any nitrobenzol is separated in drops. Both methods are inconvenient on account of the evolution of nitrous acid, which often prevents the subsequent recognition, by the odor, of traces of nitrobenzol. But according to

* Prominent firms, like those of E. de Haen, in List, near Hanover, quote them thus:

Benzin (Benzol) from coal-tar, warranted pure, 100 kilos.

No. 1, sp. gr. 0.880, boils at 80–84° C. (crystallizable)	200	Marks.
No. 2, sp. gr. 0.875, boils at 80–105° C.	140	"
No. 3, sp. gr. 0.875, boils at 80–120° C.	110	"
No. 4, sp. gr. 0.880, boils at 120–160° C.	66	"

Benzin from petroleum (Rectified Naphtha).

No. 5, sp. gr. 0.660–0.665 (gasoline-petroleum-ether, for air-gas machines)	48	Marks.
No. 6, sp. gr. 0.670–0.680 ("Aether Petrolei," Germ. Ph.)	44	"
No. 7, sp. gr. 0.690–0.700 (Best odorless Cleaning-fluid)	36	"
No. 8, sp. gr. 0.700–0.705 (Second quality Cleaning-fluid)	35.5	"
No. 9, sp. gr. 0.710 (Odorless Ligroine)	35.5	"
No. 10, sp. gr. 0.730, Cleaning Fluid ("Substitute for Oil of Turpentine")	32	"
No. 11, Cleaning Fluid, perfumed	42	"

Hofman, it is not necessary to continue the experiment to the actual production of nitrobenzol ; it is sufficient to watch the change of color of the mixture of acid and benzin in a test-tube. Benzol is colored immediately blood-red, under strong evolution of nitrous acid ; benzin, on the other hand, is scarcely at all affected by the acid, and at most only assumes a faint yellow tint. From the occurrence of intermediate tints, between faint yellow and blood-red, an approximate idea of the relative quantities of benzin and benzol present in the sample may be obtained.

Feeding by the Nose.

HAVING had great opportunities of observing patients who obstinately refuse to take food, and thereby necessitate their being fed by some mode or other, I have come to the conclusion that feeding by the nose is much preferable to any other method. Now in order to do this in the cleanest and quickest way, with the least struggling on the part of the patient and medical attendant, I have, with the aid of Messrs. Walter & Co., of Palace-road, Lambeth, had an instrument constructed. It consists of a hollow ball, made of vulcanite, which unscrews in the centre ; to this are attached three tubes, two of which are nearly parallel and fifteen inches long, for inserting through each nostril, while the third is of larger size, and has attached to it a funnel for pouring milk or beef-tea into.

The advantages I claim for the instrument are the following : (1) It does away with the necessity of having to open the mouth, which, with patients with good teeth and strong jaws, is sometimes exceedingly difficult ; thus the mouth and teeth are never damaged, which very often happens when the former has to be forcibly opened. (2) It is very expeditious, having two tubes, thus taking less time than when one is used. (3) The fluid will pass through in three minutes, and none need be spilt ; and I think there is less tendency to vomit than when a tube is passed through the mouth.

With regard to the instrument itself, there is nothing to get out of order. No metal is used in its construction, and, as it unscrews in the centre, it is very easily cleaned. I will only add that in feeding patients they are laid on their back on a mattress and fixed with a sheet across the body, steadying their head with a towel over the forehead and kneeling on the ends of the towel.—T. NEWINGTON in *The Lancet.*

A Summer Madrigal.—

"Now the boy climbs up the trees,
And the verdant fruit doth seize ;
And immediately the poison in his stomach camps,
And so do the fidgets and the colics and the cramps."

Volumetric Estimation of Sugar by an Ammoniated Copper Test.

SOME years ago Bernard introduced a modification of Fehling's copper test for sugar, in which, by the presence of a large quantity of caustic potassa, and certain organic substances, no precipitation of red cuprous oxide occurs, but where the reduced oxide is dissolved as soon as formed, and the liquid thereby gradually becomes colorless. Whilst engaged upon an inquiry into the merits of this test, it occurred to Dr. F. W. Pavy that the agency preventing the deposition of the suboxide might be the development of ammonia. With an absolutely pure solution of sugar, such as may be obtained by inverting the ordinary crystallized cane sugar, no amount of potassa will hinder the instantaneous precipitation of the suboxide. With commercial grape sugar, however, and still more with honey, interference with precipitation is exerted, and this is due, in the opinion of Dr. Pavy, to the action of the potassa in producing ammonia from the small quantity of nitrogenous organic matter incidentally present.

Dr. Pavy describes his further experiments and results as follows :

"With this before me, the idea presented itself of resorting to the direct employment of ammonia for attaining the same result. It is well known to chemists that ammonia is a powerful solvent of the suboxide of copper, leading to the production of a perfectly colorless liquid ; and this, from the facility with which it absorbs oxygen, quickly assumes a blue color under exposure to air from the re-conversion of the cuprous into the cupric oxide. If ammonia be added to the ordinary Fehling's solution, a liquid is obtained which is rendered colorless by boiling with a sufficiency of sugar to effect the complete reduction of the cupric oxide present to the state of suboxide. As the saccharine product is dropped in, the blue color gradually fades, without any occurrence of precipitation to interfere with the perception of the precise moment when the point of complete decoloration is attained. The ammonia exerts no interference with the process of reduction, but simply dissolves the reduced oxide, leading, when complete decoloration is effected, to the production of a perfectly colorless, limpid liquid. Enough ammonia must be present to secure that the suboxide is held in solution, and precaution must be taken that, whilst the analysis is being performed, the reduced oxide does not become reconverted into the oxide by exposure to air. To obviate this the operation should be conducted in a flask instead of an open capsule. The appliance that naturally suggests itself as most suitable for employment, is a flask of about 80 cc. capacity, with a cork inserted into the neck, through which a delivery tube from a Mohr's burette, graduated in tenths of a cc., passes for dropping in the product to be examined.

Through the cork, also, there must be an exit tube for the escape of air and steam from the flask. Should it be desired to avoid the impregnation of the surrounding atmosphere with ammonia, the exit tube may be connected by vulcanized tubing with a U-shaped tube containing fragments of pumice stone, moistened with water or a weak acid. The burette being fixed in the stand, the flask is allowed to hang suspended, so that there may be nothing to obstruct the full view of the contents. The heat is applied by means of a spirit lamp, and the best position for watching the disappearance of color is by the light reflected from a white background, specially provided for the purpose. It is convenient to have another burette, graduated in cc. and of 100 cc. capacity, fixed in the stand for holding and delivering the ammoniated copper solution."

After a discussion of the reducing value of the ammoniated copper test, in which the author arrives at the conclusion that, in the case of the ammoniated liquid, 6 atoms of copper are appropriated by 1 atom of sugar, instead of 5, as in the usual Fehling's solution, he continues:

"In order that the ammoniated copper liquid may be brought to the same standard of sugar value as Fehling's solution, and it is desirable that this should be the case, the proportion of copper must be increased so as to give 6 atoms against 5. By taking 120 cc. of Fehling's solution, 300 cc of strong ammonia (sp. gr. 0.880) and making up to a litre with distilled water, the proper proportion is obtained, and the ammoniated liquid gives results corroborated in accuracy by the balance, and coinciding with those obtained by Fehling's solution employed in the ordinary way. As a minor point it may be remarked that the diluted state presented by the ammoniated liquid offers an advantage by diminishing the liability to error, arising from any want of absolute precision in measurement. Twenty cub. centims. of the ammoniated copper solution, corresponding with 0.010 grm. sugar, having been run in from the burette containing the test, the flask is adapted to the cork attached to the delivery tube of the other burette containing the saccharine product for examination. The flame of a spirit lamp is then applied underneath, and the contents of the flask brought to a state of ebullition, and allowed to boil for a few minutes in order to get rid of the presence of air. The saccharine product is now allowed to drop from the burette until the blue color of the test is just removed, and a perfectly colorless limpid state produced.

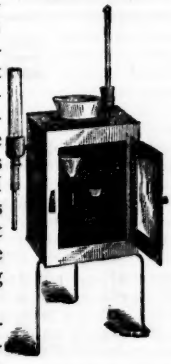
"On account of the ammoniated copper solution used being only equivalent to 2 cc. of Fehling's solution, it is necessary that the product to be examined should not be in too concentrated a form. For delicate observation it is convenient that the dilution should be such as to require the employment of from about 10 to 20 cc. to decolorize the 20 cc. of the ammoniated copper solution. The ammoniated copper solution enjoys the advantage of possessing a self-preservative power. It is well known, in the case of Fehling's solution, that, in the course of time, not only does the liquid become impaired in stability, but actually reduced in strength, by the spontaneous deposition of a certain amount of suboxide. Not so, however, with the ammoniated liquid. Here the conditions are such that under exposure to air the copper cannot fail to remain in solution, and to be maintained in a fully oxidized state. A further advantage is given by the influence of the presence of ammonia on the color of the test, for, in proportion to the height of color of a volumetric liquid, so its degree of delicacy as a reagent, and the effect of the addition of ammonia to the ordinary copper test is to considerably increase the blue color belonging to it. Seeing that the test here proposed acts with equal efficiency, either in the presence or absence of extraneous organic matter, it is alike adapted for employment by the chemist, the physiologist, and the medical practitioner in relation to diabetes."—*Chem. News*, Feb. 21st, 1879.

[ORIGINAL COMMUNICATION.]

AN IMPROVED WATER-BATH AND OVEN.

BY M. BENJAMIN., PH.B.

A FEW weeks ago, I described a water-bath with constant level attachment (current volume page 142). That such an apparatus was desirable is evident from several expressions of opinion that have been received by me since its description. In one case, I was informed that the bath was allowed to run for forty-eight hours without replenishing the reservoir, thus demonstrating its utility.



The apparatus to which attention is now requested is the outgrowth of several suggestions made in reference to the application of the constant-level attachment.

It is a drying bath made of copper with double walls; having a tubulature in one corner, into which a thermometer may be inserted; by this means an even temperature can be maintained, or in case the bath is filled with oil, that the heat may be raised to any desired point.

On the top is an opening fitted with a series of four concentric rings, which permit the apparatus being used as a water-bath, and, as in the engraving, a porcelain capsule may be heated while the lower portion is employed to dry filters or to make determinations of moisture.

The constant-level attachment is shown to

the left of the figure, and is manipulated in the same way as the water-bath. Within the oven are two tin shelves, each of which is provided with four holes to support funnels.

The dimensions of the apparatus are as follows: height 8½ inches, depth 6 inches, and width 6 inches.

In the door, I have had placed a sheet of transparent mica; this, I trust, will prove desirable, for, by simply looking in, one may see the conditions of the vessels without going to the necessity of opening the door.

As both the drying-oven and water-bath are indispensable to every analyst, there is reason to believe that some little expense can be saved by combining these two utensils in one, and thus a benefit conferred on the world of chemists.

NEW YORK, June 5th, 1879.

Hemacite, a New Waste Product.—The *Iron Age* has an account of the use derived from what, save as manure, might also be termed a waste product.

The idea of utilizing bullocks' blood is one of striking originality, and yet it has been shown by Dr. W. H. Dibble, of Elizabeth, N. J., after a long series of experiments, consuming much time, that finely finished articles could be made from bullocks' blood alone, or from this material deprived of its albumen.

Dr. Dibble found that, when bullocks' blood was mixed with certain finely-comminuted mineral or vegetable substances, singly or in combination, and the substances so obtained reduced to a dry powder, such powder could, by subjecting it to a powerful chemical and mechanical action simultaneously, be moulded into a great variety of useful and ornamental articles, and that the articles so made would possess qualities of beauty, strength, finish, and sharpness of outline. As may be supposed, the variety of articles that may be made from "Hemacite," as the product has been called, is very large. Many articles now made of hard rubber and kindred compounds are manufactured from the new material.

Of the articles made by the Dibble Manufacturing Company, chiefly in shape of door-knobs and ornamental articles, the better class of knobs are said to resemble carved ebony, and to be very beautiful, as well as agreeable to the touch. The cheaper goods seem to be made of material less minutely powdered, and covered by a coat of varnish. The articles of higher grade possess a jet-black color, a polished and uniform surface, and show a sharpness of outline in ornamentation which fully demonstrates how well the material is adapted to the reproduction of the most delicate designs. Adding to this its strength (it being a matter of great difficulty to break the knobs or detach them from the spindles even when attacked with a hatchet or hammer), and its quality of adhering firmly to metal, it will be readily understood how valuable it is for many purposes. It seems to possess a range of adaptation which is remarkable, finding, as it does, its value as cheap material for many articles of domestic use, and as the basis for most elaborate and costly pieces.

An aged Turtle.—About the middle of June a turtle was taken in the St. John's river, Florida, with the Spanish coat-of-arms and the date 1700 engraved upon his back. There was also inscribed in Spanish the sentence: "Caught in 1700, by Hernando Gomez, in the St. Sebastian, and was carried to Matanzas by Indians; from there to the Great Wekiva. The "Great Wekiva" is the name by which the St. John's river was formerly known. The turtle was put back into the river with the added inscription: *Eastern Herald* (Palatka, Florida, 1879).—*Scient. Am.*

RECENT PAPERS.

Action of Podophyllin.—E. W. FOSTER sends to the *British Med. Jour.* of May 24th an account of four cases in which the administration of podophyllum was followed by severe and prejudicial effects—abortion, intestinal hemorrhage, and severe abdominal pain being some of the symptoms produced.

In a subsequent number of the same journal, Dr. Horace Dobell remarks that the symptoms noticed by Dr. Foster need not follow if the podophyllin is used in the following manner:—℞ Resinæ Podophylli, gr. ij.; Tincturæ zingiberis, ʒ ij.; Spiritus vini rect., ad ℥ ij. Fiant guttæ. A teaspoonful to be taken in a wineglassful of water every night, every second night, or at such times as required.

Purpura from Iodide of Potassium.—T. C. FOX reports the case of a porter, aged 30, with a fine *physique* and suffering from a tubercular syphilide on the back, and who had repeated attacks of purpura with itching of the arms and legs, after taking five grains of iodide of potassium three times daily.

Sulphur in the Treatment of Acne.—DR. J. G. PARSONS says that a far more efficacious mode of treating acne than the lotion of flowers of sulphur with glycerin and water proposed by Erasmus Wilson, is to dust the face with pure precipitated sulphur every night, using for this purpose an ordinary toilet puff. He says that this will usually effect a cure in about two weeks. If desirable, oil of lemon or rose can be added to cover the odor of the sulphur.—*British Med. Jour.*

Preparations of Nitro-Glycerin.—The attention which has recently been directed to nitro-glycerin as a remedy during the paroxysms in cases of angina pectoris has led to some experiments upon the forms best suited for its administration, and Mr. Martindale, of New Cavendish St., London, according to an editorial notice in the *British Med. Jour.*, has put it up in the form of pills, lozenges or 'tablets' containing the customary dose, viz., the hundredth to the fiftieth of a grain, which may be repeated every four hours, an extra dose being taken whenever the pain is felt. The pills have a slightly sweet and chocolate flavor (owing to the nature of excipient employed). The lozenges have a similar composition. Even in the smallest dose named the physiological effects are produced. This form of administration is found to be preferable to a solution made either with a fatty substance or with ether.

Notes on Liberian Drugs.—(E. M. HOLMES.) "Erysipelas Plant:" *Tiaridium Indicum* Lehm. (*Heliotropium Indicum* L.). The inflamed part is fomented with an infusion of the leaves, and some of the fresh leaves are steamed or bruised into a pulp, and are applied to the part or bound round it. This is repeated twice a day, and is said soon to reduce the inflammation and heat. It is also used in India as an application to gum boils and to repel pimples on the face.

"Dysentery Plant:" *Oldenlandia globosa* Hiern., also called "Kackeis," somewhat similar in properties to Ipecacuanha.

"Abortive Plant:" *Stachytarpheta Jamaicensis* Vahl. (*Verbena Jamaicensis* L.). Used as an emmenagogue, under the name of vervain, in Jamaica; in Brazil, under the name jarbâo, urgevâo of orgibâo, externally for healing ulcers, and internally for rheumatism; and in Liberia is said to be used as an abortive.

"Male and Female Fern:" the fronds with fructification (male), or those without sori (female) of *Polypodium phymatodes* L. are used in nephritis and other kidney complaints. The female fern also for leucorrhœa and prolapsus uteri.

"Cream of Tartar Plant:" *Osbeckia rotundifolia* Sm. (*Dissostis plumosa* Benth.). Used by the natives as a diuretic and alterative, just like real cream of tartar (see *Oliver, Fl. Trop. Afr.*, II., 452).

Specific Gravities of Fats, Resins, etc.—(Dr. H. Hager.) The author first describes a simple method for determining these specific gravities. This consists in melting the respective fat, dropping it into a flat-bottomed vessel containing alcohol, in such a manner that the point from which the drops are allowed to fall is not over three centimetres distant from the surface of the alcohol, and that each drop be allowed to fall on a different spot. The fat-globules thus deposited at the bottom are then removed to a liquid, consisting of either alcohol, water or glycerin, or mixtures of these, until, after careful stirring, and reduction or increase of the density by the addition of one or another of the above liquids, the fat-globules are held in equilibrium in any part of the liquid. The specific gravity of the latter is then determined, and this is, of course, at the same time the specific gravity of the fat. The author then gives a list of specific gravities, which is here reproduced :

	Spec. Gr. at 15–16° C.
Butter-fat, clarified by settling	0.938–0.940
" " several months old	0.936–0.937
Artificial butter	0.924–0.930
Hog's lard, fresh	0.931–0.932
" " old	0.940–0.942
Beef-tallow	0.925–0.929
Sheep's tallow	0.937–0.940
Beef and sheep's tallow, mixed 1:1	0.936–0.938
Butter of cacao, fresh	0.950–0.952
" " very old	0.945–0.946
" and beef-tallow, mixed 1:1	0.938–0.939
Expressed oil of nutmegs	1.016–1.018
" " " extracted with carbon disulphide	1.014–1.015
Expressed oil of nutmegs, adulterated with fatty acids	1.010–1.011
Expressed oil of nutmegs, crystalline	0.965–0.966
Stearic acid, melted and in drops	0.964
" " crystalline	0.967–0.969
Wax, yellow	0.959–0.962
" African	0.960
" yellow and resin, mixed 1:1	0.973–0.976
" " and paraffin, mixed 1:1	0.916–0.919
" " " yellow ceresin, mixed 2:1	0.942–0.943
Ceresin, yellow	0.925–0.928
Wax, Japan	0.977–0.978
" " very old	0.968–0.970
" white, very old, and true	0.963–0.964
" " new	0.916–0.925
" " (new) and stearic acid, mixed 1:1	0.945
Wax, spec. gr. 0.963 and stearic acid, spec. gr. 0.963 mixed 1:1	0.975
Ceresin, very white, pure	0.905–0.908
" white	0.923–0.924
Araucaria wax	0.990
Resin (fr. pine), yellow transparent	1.083–1.084
" whitish, opaque	1.044–1.047
" very dark colophony	1.100
Shellac, light-colored	1.113–1.114
" darker	1.123
" bleached	0.965–0.968
Dammar, old	1.075
Copal, East Indian	1.063–1.070
" West Indian	1.070–1.800
" very old	1.054–1.055
Benzoin, Siam	1.235
" Penang	1.145–1.155
" Borneo	1.165–1.170
Guaiac-resin, pure	1.236–1.237
Amber	1.074–1.094
Sandarac	1.038–1.044
Mastic	1.056–1.060
Balsam of tolu, old brittle	1.231–1.232
(Kamala	1.115–1.120)
(Lycopodium	1.016–1.020)

Many of these figures may be used as criteria for distinguishing the various bodies.—*Pharm. Centralh.*, 1879, 132.

Aconite in Controlling Pneumonia.—Wm. Dobin, M.D., publishes in *The Practitioner*, of June, three cases in which the use of aconite in small and frequently repeated doses was evidently of service in arresting the development of pneumonia.

Action of Purgatives.—M. Armund Moreau has made a series of experiments upon the intestines of dogs which show that, during the action of purgatives, intestinal absorption is arrested ; and that the idea that intestinal absorption is due to *osmosis* is a fallacy, since in osmosis there is always a reverse current, while in the condition following the action of a purgative one of these currents is absolutely wanting. He considers that, instead of being regarded as a phenomenon of osmosis, absorption is related to the vitality of cellular elements.—*Br. Med. Jour.*

The Botanical Name of the Copaiva Tree.—Prof. F. A. Flueckiger brings proof that the proper spelling of the botanical name of the copaiva-tree, given to it by Desfontaines, should be *Copaifera Langsdorffii*, not "Lansdorffii," as Bentley and Trimen's Medicinal Plants have it.

Propylamine in Acute Articular Rheumatism.—James L. Tyson, M.D., in two female patients suffering with acute articular rheumatism, and who did not tolerate preparations of salicin or of colchicum, resorted to the use of hydrochlorate of propylamine as follows :

℞ Propylaminæ hydrochloratis.....gr. xxiv.
Aq. menthæ piperitæ,
Aquæ.....āā f. ʒ iij.
M. Sig.—A tablespoonful every two or three hours.

The dose of propylamine is six drops, similarly prepared and administered. Giving the muriate, as above, two grains every two hours, and swathing all the joints in cotton batting, benefit was apparent in the first twenty-four hours. For the pleurodynia a weak sinapism was applied to the chest for fifteen or twenty minutes, followed by a warm mush (corn-meal) cataplasm. These were alternated occasionally during the day. In one case ten, and in the other five days elapsed before the patients were entirely convalescent. A tonic of quinia is advisable when all rheumatic symptoms have subsided. No disturbance or appreciable influence was manifested in the therapeutic action of the propylamine, other than a gradual abatement of the fever, pain, swelling, and all the distressing nervous concomitants of acute articular rheumatism.

Boracic Acid in Skin Diseases.—Professor Neumann, who has for some years past made great use of borax ointment, has recently endeavored to bring boracic acid into use in the treatment of diseases of the skin. He prescribes an aqueous solution in parasitic diseases ; an alcoholic solution in itching consequent upon urticaria and pruritus ; the ointment in all forms of eczema. Combined treatment with soap-wash and tar is necessary in infiltrated forms of eczema. Aqueous and alcoholic solutions are applied by means of a sponge or brush, or the remedy is dusted over as a powder. In pityriasis and herpes tonsurans, solution of 10 to 20 parts in 300 parts, with the addition of 2.5–3.0 parts oil of cloves ; in eczema a salve of 10 in 50 parts. An infusion of cloves may be added to the alcoholic extract.—*Der Practische Arzt.*

Researches on Cinchonine.—(Prof. Filetti.) The author dissolved 15 grms. cinchonine in a slight excess of hydrochloric acid, diluted the solution to 4 litres, saturated it with chlorine, and exposed it to the direct action of light. A white or slightly yellow substance was deposited on the sides of the beaker. This deposit dissolves in glacial acetic acid, and is reprecipitated by water. On heating cinchonine with bromine and water for several days in a closed tube, he obtained products, the examination of which is still incomplete.—*Atti*, etc., *dei Lincei* in *Chem. News*, June 20th.

Treatment of Sciatica.—DR. COMEGYS states in the *Cincinnati Lancet* that, in his hands and in those of other practitioners, the hypodermic injection of 30 minims of of sulphuric ether, night and morning, a little posterior to the great trochanter, has effected a cure in sciatica. Dr. Starr, of the Philadelphia Episcopal Hospital, injects one-eightieth of a grain of atropia into the tissues directly over the track of the painful nerve, with manifest advantage.—*Med. Rec.*

Salicylic Acid: its Detection and Estimation.—(P. CAZENEUVE.) A more practical method than that of Yvon for the detection and estimation of small traces of salicylic acid in beverages or secretions of the body is the following: 100 cc. of the liquid are evaporated to occupy 10 cc., and after the addition of 1 cc. of hydrochloric acid and 20 grams of plaster-of-Paris, evaporated to dryness on a water-bath. The residue is digested with chloroform which, in the case of urine, is mixed with ether. The chloroform is distilled off, the residue dissolved in boiling water, and the solution filtered. If the quantity of salicylic acid be sufficiently large, it crystallizes from the solution, and may be weighed; but if the solution is too dilute, it may be detected by the addition of a drop of ferric chloride.—*J. de Ph. et de Chim.*, 1879, 221.

Volumetric Determination of Iodine.—(FREBAULT.) The author, some years ago, found that carminic acid (from cochineal), and hematine (from logwood), were decolorized by iodine. He now proposes to utilize this fact for the volumetric determination of iodine. The requisite test-solution need not be made with carminic acid, but may consist of a plain, very dilute tincture of cochineal. The power of the latter is determined by trying it with a solution of iodine of known strength: 1 gm. of iodine are dissolved in water or in weak alcohol, with the addition of 2 to 3 gm. of potassium iodide, to measure 1 litre. Each cubic centimetre of this contains 1 milligram of iodine. 10 cc. of the dilute tincture of cochineal are now placed into a white porcelain capsule, 2 cc. of a cold saturated solution of sodium bicarbonate are added, and the iodine solution is gradually dropped in from a burette, under constant stirring, until the whole liquid is colorless. The author states that the point of transition is readily observed. Supposing we had used 25 cc. of iodine solution. We therefore have the relation: 10 cc. of the tincture of cochineal are equal to 0.025 gm. of iodine. Now prepare a standard iodine solution of such a strength that it will correspond to the tincture of cochineal, cc. for cc. Such a solution requires in this case 2.50 gm. of iodine in the litre.

In examining a sample of commercial iodine, dissolve 0.25 gm. of the latter in 100 cc. of alcohol or water (with potassium iodide), place 10 cc. of tincture of cochineal into a capsule with 2 cc. of a cold saturated solution of sodium bicarbonate, and titrate with the iodine solution. —*Rép. de Pharm.*, 1879, 260.

The Solar Rays as a Caustic.—For some years, according to *La France Médicale*, an Italian physician has successfully used the heat of the sun for the destruction of nævi, warts, and other excrescences on the skin; while more recently this method of cauterization has been applied to the treatment of syphilitic ulcers and condylomata. It is characterized by absence of hemorrhage or inflammation, it causes very little pain, and the cicatrix which it leaves is small and little noticed. The eschar separates on the fourteenth or sixteenth day, leaving a wound which rapidly closes. The instrument employed consists of a bi-convex lens 2½ inches in diameter, and having a focus of about 10 inches. Directly the solar rays penetrate the skin the characteristic crepitation of combustion is heard, while the coagulation of the blood and the retraction of the blood-vessels are quite visible.*—*Med. Press and Circular.*

*The name of the physician is not mentioned, but further particulars of this method of cauterization will be found in the *Gaz. Med. Ital., prov. Venete.*

Sodium Benzoate in Puerperal Fever.—DR. PETERSEN puts on record the case of a young woman, 25 years of age, a primipara, who, twelve days after confinement, was seized with puerperal fever. The symptoms were those of circumscribed parametritis, limited chiefly to the right side and the fundus uteri; there were also great pain and meteorism, diarrhœa, a pulse of 140–150, and a temperature of 104° F. Salicylate of sodium reduced the temperature, but its administration was followed by a threatening collapse, extreme dyspnœa, and an increase of the meteorism. Benzoate of sodium was then ordered —a tablespoonful every hour of a solution containing 10 gm. (subsequently increased to 15) of the salt to 20 gm. of water. This was followed by marked improvement; the pulse gradually fell to 104, and the temperature to 101.3° F., the dyspnœa disappeared, the meteorism diminished, and the patient felt in every way more comfortable. The subsequent progress of the case was all that could be desired. Dr. P. does not mean to uphold benzoate of sodium as a specific for puerperal fever, but he strongly recommends it for further trial.—*Centralblatt der Med. Wissensch.*

The California Codfish Trade.—The following facts and figures with regard to the codfish trade of the Pacific coast are given by the San Francisco *Alta*. The four firms employed in this industry employ nine vessels. An ordinary catch for this number of vessels is 1,000 tons, and they carry from San Francisco 800 tons of salt to pack the fish for the return voyage. The season commences about March 1st and closes October 1st. The fish are caught off the Alaska coast and Choumagin Islands on the American side, and in the Ochotsk sea on the Asiatic side, where the fish are taken with hand lines, while trawls are exclusively used on the banks near the Alaska shore. Each fisherman has a dory to himself, and tries hard to make the best catch in the fleet. The hand line fishing is quite exciting, and the men take to it like sport.

When the fish are hauled on board from the boats, they are at once cleaned and packed in frames in the vessels' hold, a thick layer of salt on each layer of fish. At the close of the season sail is made for San Francisco, and here the fish are washed, soaked in brine, and dried for market.—*Scient. Am.*

Aluminium Borate as a Preservative.—POUSSIER proposes to use aluminium borate in place of salicylic acid for preserving animal substances. The latter are to be dipped into a 10–15 per cent solution of the salt, then removed and sprinkled with the dry substance, and finally packed, with exclusion of air. Fresh meat may be preserved by giving it, with a brush, a coat of a syrupy solution of the salt, and exposing it to a current of air, protected from insects. Skins treated during the tanning process with this salt—which does not in the least interfere with the latter—are said to become extremely soft.—*Industrie Blätter.*

To preserve Herbarium-Specimens.—According to St. Martin, herbarium-specimens of plants are best preserved by pouring over them, after they have been dried in the ordinary way, a hot solution of 10 parts of sodium arsenate in 300 parts of water and 30 parts of glycerin.—*Pharm. Handelsbl.* and *Pharm. Zeit. f. Russl.*

Weather-Prediction.—(PROF. KLINKERFUS.) The author gives the following conclusions: The dew-point read off at sunset indicates the minimum temperature for the night. If the dew-point is below 0° and the sky clear, frost is to be expected. If it is about 5° below the mean temperature for the day, a cold and dry current of air is approaching. Inversely, a high dew-point indicates that a warm and moist current is approaching, when the air may easily reach its point of saturation, rain then being the result. If, in a day hotter than the average, the dew-point equals or exceeds this temperature, thunderstorms may be expected on account of the quantity of condensed vapor. If the dew-point rises to 20° C., hail may be expected.—*Biederman's Centralbl.* in *Chem. News.*

A Salt Mountain in St. Domingo.—Europe has its subterranean salt mines, of which the saline springs were, until lately, used by gradually evaporating the brine pumped over brushwood, where a strong current of air contributed to its evaporation until it became sufficiently strong for the salt pans. A brine containing only one-fifth per cent of salt was thus concentrated to a strength of from 15 to 18 per cent. This brine was rapidly evaporated by artificial heat, a considerable deposit of sulphate of soda being formed, which was from time to time removed, leaving the crystallized salt behind. This process of brush evaporation has been entirely abandoned since the discovery of solid salt deposit by boring at comparatively easy depths. Saxony, the Salzkammergut in Austria, and Wieliczka, the south of France, Droitwitch and Chester in England, yield immense quantities of rock salt, but nowhere in the world have the convulsions of the earth thrown out such enormous masses as in the island of St. Domingo. Here a mountain more than nine miles in length, and from one-half to three-quarters of a mile in width, of a height of from 100 to 700 feet, is composed of solid layers of salt, nearly pure and ready for use. The inhabitants have used this for hundreds of years, and though Humboldt mentioned this phenomenon at the commencement of this century, though many other explorers, notably Sir Robert Schomburgk, have spoken about the commercial value of this heap of condiment, no serious efforts have been made until lately to turn this scource of profit to account. That this neglect has continued during the last decade is perhaps to be attributed to the unfortunate speculation with which the name of St. Domingo has been coupled. Lately a company has been formed in this country to work these mines in connection with American capitalists, for which the Dominican Government has granted concessions. The quantity of salt in sight is reported to be inexhaustible, and the labor necessary to extract it is that of simple quarrying. This mountain is about fifteen miles distant from the town of Barahona on the Bay of Neyba, where vessels of the largest tonnage can find safe shelter and anchorage near the shore. A railway to connect this port with the mine is contracted for, and the necessary jetties will soon be commenced. This enterprise is of great value to the fishermen of Nova Scotia and Newfoundland, as it must naturally furnish them with cheaper salt than is obtained from the sources whence they have received it heretofore. The great market, however, open to this enterprise must be the United States, consuming as they do a total of over 1,300,000 tons annually, of which about one-half is imported from abroad, principally from Liverpool, but also from Turk's island in the Bahamas, Hyères in France, Trapani in Sicily, Cadiz in Spain, Curaçao in the Dutch West Indies. According to the New England illustrated newspaper, called *Industry*, later surveys and reports by Mr. Ruschhaupt, civil and mining engineer, and by Mr. Brandner, C. E., fully confirm the opinions which have been formed.—*Scient. Am. Suppl.*

Chitenin: a new Derivative of Quinia.—(Zd. H. Skraup.) The author, whose special investigations on the Cinchona alkaloids and their decomposition products have for ultimate aim the discovery of the true constitution (and therefore, synthesis) of these alkaloids, has prepared from quinia—in a similar manner as previously already from cinchona and cinchonidia—a new base, by oxidizing quinia in the *cold* with potassium permanganate. Sulphate of quinia is dissolved in water with the aid of just so much sulphuric acid that all the potassium of the permanganate was converted into sulphate. One part of quinia requires about 12–15 parts [of acid], and a 3% solution of the permanganate is added in drops, under constant cooling with ice, until 1 molecule of quinia has been subjected to the effects of 4 of oxygen. In other words, 5 gm. of sulphate of quinia, of the composition $2C_{20}H_{24}N_2O_2.H_2SO_4.2H_2O$, require 5.5 gm. of permanganate. When the reaction is terminated, the colorless liquid is almost free from organic traces, but the brown precipitate of manganese dioxide contains, mixed with it, the new substance which may be extracted from it by repeated boiling with dilute alcohol. About 70% of the theoretical quantity are generally obtained. When pure it is in white prisms, with difficulty soluble in cold water, nearly insoluble in absolute alcohol and ether, best soluble in hot dilute alcohol, from which it crystallizes on cooling. In water containing a little ammonia, or, better, potassa, it is easily soluble. Dilute acids likewise dissolve it readily. The aqueous solution is *neutral*, and is precipitated by metallic salts. The author has named it *Chitenin*. Previously he had named the corresponding derivatives of cinchonia and cinchonidia: *cinchotenin* and *cinchotenidin*. Chitenin is a very feeble base. Its solution in ½ mol. of dilute sulphuric acid yields first crystals of chitenin itself, and afterwards very fine needles of the acid salt: $2C_{19}H_{22}N_2O_4.3H_2SO_4.15H_2O$. The formula of crystallized chitenin is: $C_{19}H_{22}N_2O_4.4H_2O$. The water is lost at 120° C.—*Ber. d. Deutsch. Chem. Ges.*, 1879, 1140.

A threatened Infliction of New Bitters.—A prominent German pharmaceutical journal contains the following advertisement, which we shall give without further comment than to say that we are surprised to find it in the journal mentioned: A premium of 200 Imperial Marks is offered, by competition, for the best formula, accompanied with proper directions of manufacture, of *alcoholic and tonic Stomach-Bitters, suitable for transatlantic consumption*, and effective against malarial fever, indigestion, biliousness, kidney disease, and constipation; must be of pleasant taste and inexpensive when prepared on a large scale. Those formulæ which are not accepted will be returned on demand. It is requested to accompany the formula with a short, suitable *name* for the bitters. The strictest discretion is guaranteed; etc.

On Cinchonidia.—(Zd. H. Skraup and G. Vortman.) The authors have reinvestigated the constitution of cinchonidia, and found that it corresponds much more closely to the new formula $C_{19}H_{22}N_2O$ (which had previously already been vindicated by Skraup for cinchonia) than to the previously accepted formula $C_{20}H_{22}N_2O$.—*Lieb. Annal. d. Chem.*, 197, 226.

On Glycyrrhizin.—(J. Habermann.) The author has succeeded in extracting from the commercial "ammoniacal glycyrrhizin," which occurs in dark-brown colored scales, a proximate principle which may be considered as the active constituent of licorice. It was obtained by dissolving the crude glycyrrhizin in glacial acetic acid at a boiling temperature, rapidly filtering, again treating the crystalline parts of the filtrate in the same manner, and finally purifying by repeated crystallizations from 90% alcohol. Its properties are peculiar, and account to a great extent for the singular behavior of liquid licorice preparations. With water, in which the substance is but little soluble at ordinary temperature, it forms a transparent, faintly yellow jelly. On mixing 1 gm. of the body with 100 cc. of water, the mixture after a few hours becomes so jelly-like that the open vessel may be inverted without losing any substance. It is insoluble in ether, but little soluble in absolute alcohol, even boiling, more so in alcohol of 90%, and especially so when hot. Its solubility increases with the decrease of the percentage of alcohol. The author regards the principle as an acid, "glycyrrhizic acid," combined with ammonia. His results so far indicate: 1st, that licorice root contains the above-named nitrogenized acid in form of salts; 2d, that this acid is tribasic, and may form acid and neutral salts; 3d, that the acid potassium and ammonium salt are particularly easy of crystallization, and intensely sweet; 4th, that the sweet taste of licorice is probably due to the ammonium salt of the acid.—*Lieb. Annal. d. Chem.*, 197, 105.

Adulterated Hops.—The *Transactions of the Medical Society of Upsala* contain an account of an ingenious piece of rascality in the hop trade, said to be practised on a considerable scale in that city. Hops which have

already been used for making extracts or for brewing in the ordinary way, are damped with a tincture of absinthe or wormwood, freed from spirit by distillation, re-dried, and then placed in the market as a genuine article with or without much bloom. Owing to their increased bitterness they often command a better price than unadulterated hops.—*Brit. Trade J.*

Chinichine, a Derivative of Quinia.—MR. DRYGIN, who last year announced the presence, in the mother-water left after the preparation of his "hydrochlorate of quinia and urea," of a new alkaloid "chinichine,"* states that the antifebrile affects of this alkaloid appear to exceed those of quinia. Trials made in Russian military hospitals have shown that a solution of the basic salt introduced into the rectum is easily absorbed, does not irritate, and effects a cure after all other remedies had failed.—*Pharm. Zeitsch. f. Russl.*, No. 12.

Preparation of Wax-Paper.—This is usually prepared by melting wax in the water-bath, heated to over 100° C. (over 212° F., which temperature may be exceeded by dissolving some salt in the water), and rapidly passing fine white paper through the liquid. But paper prepared in this way is very brittle, although very handsome. An improvement consists in adding to the wax certain softening ingredients. One part of bleached caoutchouc is melted in 2 parts of white Venice turpentine, and this mixture melted together with 20 parts of wax. The hot liquid is applied to paper with a brush. The waxed surface, when cold, may be made highly lustrous by polishing with a fine rag.—*Chem. Zeit.*, and *Pharm. Zeitsch. f. Russl.*

To clarify Alcoholic Liquids.—DR. F. FILSINGER communicates to the *Chemiker Zeitung* the composition of a clarifying agent which had been previously kept secret. It consists of two liquids: 1st, a solution of 70 grams of aluminium sulphate in 1 litre of water; 2d, a solution of 90 grams of crystallized soda in 1 litre of water. To each 100 litres (26.42 gall.) of the liquid to be clarified, 109 cc. (3¾ fl. ℥) of the first solution are added, and the whole well stirred. Then 100 cc. of the second solution are added, stirring constantly, and the whole left at rest for several days. Alumina is precipitated, which carries with it any flocculent matters, and renders the liquid clear. The latter will, of course, contain a proportionate quantity of sodium sulphate. Hence this process can only be used where the presence of the latter salt (which is in too small a proportion to betray itself by the taste) will be unobjectionable.—*Industrie Blätter.*

Isinglass from Seaweeds.—A very interesting product, called "kanten," or vegetable isinglass—a species of gelose derived from either of the seaweeds *Gelidium corneum* or *Plocaria lichenoides*—is made in China and Japan, and exported to Europe in flat and moulded tablets and in bundles of strips. It is know in Cochin China, as "hai thao." It is soluble in boiling water only, of which it takes up about 500 times its weight. It is manufactured as follows: The seaweed, called by the native name of "tengusa," is carefully washed and afterward boiled, so as to form a gluish decoction, which is strained off and put into square boxes. When cool it forms a stiff jelly, which can easily be divided into squares a foot in length. The manner in which the surplus water is removed is very ingenious. The jelly prisms are exposed in the open air during a cold night and allowed to freeze. During the day the sun melts the water, which runs off, leaving behind what one might term the skeleton of white, horny substance, which is extremely light and easily dissolved in hot water; when cooled, it again forms a stiff jelly. This article can be applied to many purposes—for culinary uses, for making bon-bons and jellies, for clarifying liquids, as a substitute for animal isinglass, for making moulds used by the plaster-of-Paris workers, for hardening the same material—in short, as substitute for all kinds of gelatines, over which it has the advantage of producing a firmer jelly.—*Confect. Journal.*

Salicylic Acid and Salicylate of Sodium in Acute Sciatica and Facial Neuralgia.—(S. L. ABBOT.) A man liable to rheumatism had sciatica due to exposure while boating. Morphia hypodermically and by the mouth, and bromide of potassium and chloral failed to do more than mitigate the pain. Doses of eight grains of salicylic acid dissolved in solution of acetate of ammonium, at intervals of two hours, produced entire relief while they were continued, and they were afterwards increased to 12 and 16 grains. Convalescence was aided with sulphate of cinchonidia and Blancard's pills. A second case, without a history of rheumatism, occurred in a lady who had speedy relief with the same treatment. Still a third case was also cured by doses of 12 grains of salicylate of sodium.

A woman suffering with facial neuralgia, who was unrelieved by sulphate of cinchonidia and guarana, had immediate relief of pain following one dose of 16 grains, and continued to take the remedy in 4-grain doses (to avoid nausea) until evening. Two other cases of similar nature were in like manner cured by doses of 10 and 12 grains of salicylate of sodium repeated every two hours, marked relief following the first dose.

Use of Euonymin and Iridin as Purgatives.—FREDERIC BARNES writes to the *British Medical Journal*: "I have administered these drugs in thirty or forty cases, giving one grain of euonymin or four of iridin, in the form of a pill. In every case, except one, purgation followed, and in this exceptional instance the patient had been on a prior course of an astringent preparation of iron. There was little difference relatively in the action of the two drugs. Each undoubtedly produced from two to four evacuations (and in one case eight or nine), which were generally yellow-colored."

The pill was usually administered at bed-time, and no action of the bowels would then take place until the following morning, occasionally it was even some hours later. The slight depression which is usual to follow their action was not complained of by the patient in a single instance; in fact, rather the reverse occurred, the tongue rapidly cleaning, and the patient feeling more cheerful.

Carbolic Acid in Whooping-Cough.—DR. THORNER has treated successfully sixteen cases of whooping-cough by means of carbolic acid inhalations. In the case of older children, he makes them breathe a one or two-per-cent solution at a distance of about a metre from the end of an ordinary inhaling apparatus, whose globe has a capacity of about 80. In the case of smaller children, however, the author has found it best to keep them in a small room for about twenty minutes, the windows and doors of which have previously been closed, and in which two or three glasses of the acid have been sprinkled.—*Centralbl. f. Med. Wiss.*

[On page 285 will be found a notice of an apparatus recently introduced to the trade by Messrs. Page, Kidder, & Fletcher, of this city, for vaporizing cresol for a similar purpose.—ED.]

Ether with Cod-Liver Oil.—A committee of the N. Y. Therapeutical Society finds that the addition of ether to cod-liver oil, in the proportion of fifteen minims to each half ounce (or an equivalent amount of compound spirits of ether), will succeed in a vast majority of cases in enabling the oil to be retained, although it may previously have disagreed. In some cases in which the oil continues to be disagreeable after the addition of ether, the difficulty may be overcome by giving the ether separately, from fifteen to thirty minutes after the oil has been taken. No facts have been laid before the committee, having a bearing upon the question as to whether the etherized oil is superior to the plain oil in its ultimate effects upon nutrition, supposing them to be equally well tolerated by the stomach.

* See NEW REM., 1878, p. 334, where on line 8 from bottom Chinichine should be read, instead of Cinchonichine.

The Effects of an Over-dose of Gelsemium Sempervirens.—(F. W. Goss.) A lady of nervous temperament took a teaspoonful of fluid extract. Dimness of vision came on in an hour, and was followed by paralysis of muscles of lower jaw and tingling of the extremities. Five and a half hours later, she was conscious, but believed herself to be dying. There was difficulty in swallowing, faintness, difficult articulation; tongue stiff, open mouth; pupils widely dilated and immovable; pulse 132, and feeble; respirations 27 and regular. Carbonate of ammonia and galvanism were used, and the patient recovered, having suffered, also, from nose-bleed.—*Boston Med. and Surg. Jour.*

Cultivation of the Castor-oil Bean.—The *Kansas Agricultural Report* has an interesting paper on Castor-oil-bean culture by the Hon. Edw. Ballaine, which is reprinted in the *Scientific American Supplement* of July 26th. According to this writer, the *Ricinus communis* does well in the gray soil of Kansas valleys; and although they do not grow so tall, they appear to produce better than on limestone-soil. The ground was ploughed in winter, from eight to ten inches deep, and marked as for corn, four feet apart. When weeds began to appear, cross-furrows four feet apart were made with a shovel plough and two beans were dropped by hand at the intersection of these furrows, and were lightly covered with dirt by means of the foot. The crop was afterwards ploughed or cultivated four times, the last ploughing being about the 1st of July; the plants having thus grown three to four feet high.

The spike is ripe as soon as one or more bolls on it have turned brown on it or opened, and not before; the centre spike ripening first, then the second set, and so on. By experience the picker soon tells them, both by the color of the spike and by the touch. The former is of a darker green and somewhat glazed. When growing, the bolls are covered with a hairy coating, which is soft to the touch; but when the spike is ripe this turns stiff and bristly, indicating that the spike, having ceased to absorb from the parent plant, is now drying up, and, of course, is ripe. Amateurs should never cut a spike until some of the bolls have expelled their fruit. After the first picking, two wagon loads per hand were gathered per day, and each wagon load of spikes, well tramped, equalled twenty-two bushels of corn and yielded five and a half to six bushels of beans. Picking commenced the 15th of August and was repeated on the 1st of September, and each ten days thereafter, ending on the 6th of November, although it should have been done once more.

In order to "pop" the beans, old hay and flax straw was placed to the depth of a foot or more on a piece of unbroken ground and was burned towards the windward, thus destroying the grass and tufts of weeds, leaving the ground entirely smooth and hard, and needing only to be swept. A space of twenty feet square will suffice for an acre of beans. The beans are unloaded with a pitch-fork in piles of a wagon-load. The next day the spikes are spread evenly, so that they consist of a single layer. Five or six days of dry weather are required to open the pods. When sufficiently dry, the bursting of the pods was aided by going over them with a two-horse roller drawn by unshod horses. As the pods rupture, the beans are expelled to a distance of a few feet. The spikes are then raked off; the beans and husks swept and scraped together; after which they are fanned and also screened to separate the dirt. The unopened bolls are again exposed to the sun; fresh spikes are added, and the process repeated.

Twenty-three and a half acres yielded about fourteen bushels of beans to the acre, not counting eight to ten beans—oftentimes more—to every foot of ground which had popped out before picking, and which were not recovered. Three laborers who were paid forty cents per day each for twenty-five days with one hand, at fifteen dollars per month, and two and a half months made a total expense for collecting $67.50.

This being an experimental crop, the gain was not so great as would have been the case with more experience, and an average of twenty bushels per acre is presumed to be a reasonable average to expect.

Two quarts of seeds are sufficient to plant an acre. Great care should be used in selecting seed from the same picking and even from the same set of spikes. The seed used on this occasion was from a miscellaneous lot and came up, grew, and ripened very unevenly. They should always be thinned to one in a hill. From four to five feet should be allowed between rows. A bushel of prime seeds yields, under a hydraulic pressure, two gallons and three pints of oil; with a screw-press about two gallons. The demand for this oil for lubricating purposes especially has very considerably increased within a year.

Until 1874, 25% of the beans used in this country were imported from India. None are imported now. Manufacturers claim that exportation of oil cannot take place until beans can be had for fifty cents a bushel. St. Louis is the centre of castor-oil manufacture in this country.

The writer states that during the planting the children engaged ate a few beans (some ate as many as a dozen) after pulling off the hull, and suffered from sensations of nausea. The horses engaged in the cultivation suffered no ill-effects; care was taken, however, not to feed in a wagon-box which had contained shelled beans. Grasshoppers will not touch the plant and chinch-bugs will not even cross a field containing them. Heavy rains do not injure the plants, nor do they fail to mature well in a drought.

Influence of Plants on the Products of the Dairy.—The Agricultural Museum of Berlin lately exhibited at the Dairy Exhibition a collection of plants which may influence the different products of the dairy. The catalogue gave the following list:

1. Plants which coagulate milk: The milky juice of the fruit of *Aspidosperma Quebracho* Lor., used in the Argentine Republic; the milky juice of the unripe fruit of *Carica Papaya* L., papaw-tree; *Cirsium arvense* Lam., Canada thistle; *Cynara Cardunculus* L., Chardoon; *Ficus Carica* L., Fig; *Oxalis acetosella* L., Wood-sorrel; *Piper nigrum* L., Black Pepper; *Quercus infectoria* Oliv., Gall-oak; *Rumex Patientia* L., Garden Patience.

2. Plants which prevent the coagulation of milk: *Cochlearia Armoracia* L., Horseradish; *Pinguicula vulgaris* L., Common Butterwort; *Sanicula Europæa* L., Wood Sanicle.

3. Plants which are used to color Butter and Cheese: *Bixa orellana* L., Annatto; *Calendula officinalis* L., Marigold; *Carthamus tinctorius* L., Safflower; *Crocus sativus* L., Saffron; *Curcuma longa* L., Turmeric; *Crozophora tinctoria* Ad. Juss., Turnsol; *Daucus Carota* L., Carrot; *Morus tinctoria* L., Fustic. [Also *Galium verum* L., Cheese renning Bedstraw, or Yellow Bedstraw.—ED. N. R.]

4. Plants which are used to flavor Cheese: *Melilotus cærulea* L., Blue Melilot; *Penicillum glaucum* Lk., Blue Penicillum.

5. Plants used to prevent Rancidity in Butter: *Rumex Abyssinicus* Hochst., Abyssian Sorrel.

6. Plants which impart to milk a peculiar color, after being eaten by cows: *a*) reddish: *Galium verum* L., Yellow Bedstraw; *Rubia tinctorum* L., Madder. The same is said of species of *Carex*, *Scirpus*, *Equisetum*, *Ranunculus*, *Euphorbia*, and of young twigs of pine, etc. *b*.) yellowish: *Daucus Carota* L., Carrot; *Rheum palmatum* L., Rhubarb. *c*.) blue: *Anchusa officinalis* L., and *A. tinctoria* L., Alkanet; *Butomus umbellatus* L., Water-violet; *Melampyrum arvense* L., Purple Cow-wheat; *Mercurialis perennis* L., Perennial Mercury; *Polygonum aviculare* L., Common Knot-grass; *Polygonum Fagopyrum* L., Buckwheat; *Rhinanthus major* L., Yellow Rattle.

7. Plants which impart a peculiar, often acrid taste to Milk: *Allium ursinum* L., Ramsons; *Artemisia Absinthium* L., Wormwood; *Brassica Napus* L., Rape; *Brassica Rapa* L., Wild Turnip; *Euphorbia Cyparissias* L., Cypress Spurge; *Gratiola officinalis* L., Hedge Hyssop; *Helleborus niger* L., Black Hellebore; *Matricaria Chamomilla* L., German Chamomile; *Zea Mays* L., Maize. —From *Industrie Blätter.*

Prices of German Chemicals.—In looking over the price list of E. DE HAEN, Chemische Fabrik, List vor Hanover, No. 103, March, 1879, which is intended for purchasers of large quantities, we encounter a number of articles which are but seldom quoted in American price lists, but which are likely to be of interest to our readers. We affix the prices given in the original, *in marks* (1 mark = 23.8 cents); but it must be understood that the price is meant for quantities of at least 10 kilos, where it is given for 100 kilos, an advance being charged for smaller packages. Freight, insurance, packages, and duty must likewise be added. (*k*=kilogramme, or 2 lbs. 3 oz. 119.7 grains, avoirdupois.)

Acetone, absolutely pure, boiling at 56° C.	*k* :	4.30
" for technical uses	100 *k* :	160
Acid, arsenic, liquid, for techn. uses, 75° B.	100 *k* :	60*
" benzoic, white, made fr. urine	*k* :	:6
" formic, pure, sp. gr. 1150	*k* :	11*
" hydrobromic, sp. gr. 1204 (=25%HBr)	*k* :	10*
" " conc. 1380	*k* :	15
" phosphoric, liquid, pure, fr. phosphorus, spec. gr. 1700	100 *k* :	310
" " 1600	100 *k* :	260
" " 1500	100 *k* :	245
" " 1300	100 *k* :	162
" " 1200	100 *k* :	112
Acid, sulphuric, anhydrous for techn. uses, in tin boxes, containing 10 kilos of 45% anhydride	*k* :	1.60
95% anhydride	*k* :	3.20
Ether, œnanthic, No. 1. 2. 3	*k* :	90.—60.—40
Rum essence	100 *k* :	280
Arack essence	100 *k* :	400
Aldehyde, concentr.	50 *k* :	250
Ammonium vanadate (for aniline black, indelible ink, etc.)	100 *gr* :	92
Barium bromide	*k* :	18
Barium chlorate, pure cryst.	*k* :	6
Bromine, *chem. pure* (free from iodine and chlorine	*k* :	6.20*
Casein, pure	100 *k* :	230
Chromium tungstate, as paste, for technical purposes	100 *k* :	66
Potassium bromide, *chem. pure*	50 *k* :	450
" chlorate, cryst. *chem. pure*	100 *k* :	220
" xanthogenate (for destroying the potato and vine-bug)	10 *k* :	15
Creasote, from beechwood-tar	10 *k* :	80
Manganese, borate (used as dryer)	100 *k* :	150
" dioxide, pure hydrated (for varnish manufacture)	100 *k* :	120
Naphthalin, crude (for destroying vermin, roaches, etc.)	100 *k* :	18
Naphthalin, better qualities, per 100 *k* :	from 54 to	140
Sodium stannate (used in dyeing) 50%	100 *k* :	145
Oleum Rusci (genuine Russian oil of birch =Oleum Betulæ pyrolignosum)	100 *k* :	120
Phenolphthalein	100 *gm* :	18
Antimony, golden sulphuret (for red rubber goods)	100 *k* :	210 to 310
Vanadium chloride, pure	100 *gm* :	92
Nigrosine (soluble aniline black)	*k* :	24

Bichloride of Methylene as an Anæsthetic.—Dr. L. P. YANDELL, writing to the *Louisville Medical News* from London, says that Mr. Spencer Wells has used bichloride of methylene as an anæsthetic for more than ten years without an accident, and considers it the safest and best of anæsthetics. Mr. B. W. Richardson, its inventor, says that in over a hundred thousand cases in which it has been employed for a similar purpose, no evil has resulted. Mr. Thornton uses it exclusively as an anæsthetic in his surgical practice, and claims for it that its effects are less dangerous, more rapid, and less likely to be followed by vomiting than is the case with chloroform.

*At lower prices, if larger quantities are taken.

BIBLIOGRAPHY.

THE DRUGGISTS' COST-BOOK. By JOHN H. NELSON, author of the "Druggists' Handbook of Private Formulæ." Cleveland, O., 1879. 8vo, pp. 560.

THE aim of the author has been to produce a cost and price-book which would contain all the substances and articles at present dealt in by the wholesale and retail druggists. This purpose has been carried out by the author in an admirable manner. The whole book is divided into five parts, of which the *first* contains drugs, medicines, chemicals, etc.; the *second*, paints, colors, oils, naval stores, varnishes, and painters' sundries; the *third*, ales, wines, and liquors; the *fourth*, patent medicines and proprietary articles; and the *fifth*, druggists' sundries, glass ware, etc.

The first three parts are indexed at the margin by one alphabet. The fourth and fifth parts have each a separate alphabetical index. Under each division the list is so complete that we have not missed an article we have looked for. Altogether the book is without doubt the most useful and best arranged of the kind that has ever appeared. It is bound in the style of large pocket and memorandum-books, with flap, and the printing as well as the paper are all that could be desired.

THE ADVANTAGES AND ACCIDENTS OF ARTIFICIAL ANÆSTHESIA. A Manual of Anæsthetic Agents, and their Employment in the Treatment of Disease, by LAURENCE TURNBULL, M.D., PH.G., etc. Second Edition, Revised and Enlarged, with twenty-seven Illustrations. Philadelphia: Lindsay & Blakiston, 1879, sm. 8vo, pp. 322.

THIS work gives a very practical summary of the present knowledge respecting anæsthesia. It describes the various anæsthetic agents, both general and local, with their tests of purity, effects, methods of employment, and the accidents to which their use is liable. The history of the subject is narrated, the apparatuses used are carefully described, and numerous cases, observations, and quotations from writers on the subject are given. The book forms a fitting appendix to most treatises on general and operative surgery, in which information on this subject, so important for the surgeon, is chiefly conspicuous by its absence.

MEMORANDA ON POISONS. By THOMAS HAWKES TANNER, M.D., F.L.S., Fourth American, from the Last London Enlarged and Revised Edition. Philadelphia: Lindsay & Blakiston, 1879, 12mo, pp. 201.

LIKE all the works of Dr. Tanner, this will be found to cover the ground quite as thoroughly as its size would admit. The Editor has adopted the classification of General Toxicology, I.—Corrosive Poisons, II.—Simple Irritant Poisons, III.—Specific Irritant Poisons, and IV.—Neurotic Poisons, in which he includes Narcotics, Anæsthetics, Inebriants, Delirants, Convulsants, Paralysants, Hyposthenients or Syncopants, Depressants, Asphyxiants, and Abortives.

REVISED CATALOGUE of Foreign and Domestic Drugs, Selected Powders, Fine Essential Oils, Waters and Extracts, Chemical Reagents, Pharmaceutical Preparations, Wines and Liquors, Proprietary Medicines, Druggists' Shop-Furniture, Druggists' Sundries and Surgical Appliances, Sponges, Fancy Goods, and Toilet articles for sale by Weeks & Potter, Importers and Jobbers, 360 Washington St., Boston, 1879.

PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, at the Twenty-sixth Annual Meeting, held in Atlanta, Ga., November, 1878; also the Constitution, By-Laws, and Roll of Members. Philadelphia: 1879, pp. 998, 8vo.

THE present volume, which is the largest ever issued by the Association, reflects great credit both upon the Association itself, and upon the Secretary, Prof. J. M. Maisch, who edited the work. As usual, the most val-

uable and interesting portion is placed at the beginning, namely, the Report on the Progress of Pharmacy by Prof. J. Lewis Diehl, of Louisville, Ky., which covers the whole field of the various departments of science relating to pharmacy, and gives a very complete and instructive resumé of new discoveries, researches, preparations, utensils, and analytical methods. This portion of the text is well illustrated, and it affords us pleasure to say that we have been able to contribute towards the usefulness of this volume to the members of the American Pharmaceutical Association by the loan of such cuts from NEW REMEDIES as were required to make the descriptions intelligible and interesting, although in a number of instances we have not been credited therewith. The same courtesy has been extended to the work by the *American Journal of Pharmacy*.

The papers and reports presented to the Association in 1878 are not inferior in interest and importance to those previously offered, and we shall have occasion hereafter to recur to several of them. A few of the papers, namely those prepared for the Pharmacopœia Committee, have already been published by us, in order to give them early circulation.

A new feature, of great usefulness, is the alphabetical list of members, giving their exact address. In next year's volume we hope to see also a complete list of all Pharmaceutical Societies, State Associations, Colleges, Alumni Associations, Boards of Pharmacy, etc., giving the names of their officers, and the exact address of their Secretaries. This list would likewise be of great usefulness to the members of the Association.

LABORATORY TEACHING; or, Progressive Exercises in Practical Chemistry. By CHAS. LOUDON BLOXAM, Prof. of Chemistry in King's College, London, etc. Fourth Edition, with 89 illustrations. Philadelphia: Lindsay & Blakiston, 8vo.

BLOXAM'S Laboratory Teaching has become so well known since its first issue in 1869, that it is scarcely necessary to do more than to draw attention to the fact that a new and improved edition has just been issued, in which the most important alteration has been the introduction of the formulæ representing the various chemical compounds described in the Notes to the Tables. The final sentence of the new preface, in which the author says that "an endeavor to be absolutely consistent would injure the practical usefulness of so small a book," appears to have been misunderstood in some quarters. We fully agree with the author in believing that it would be unwise, in an elementary book of this kind, to follow each reaction into its last possible results, or to alter well-known and easily understood expressions of analytical results, so as to bring them in logical harmony with the more advanced views in chemistry. This stand-point will be attained without difficulty by any one who has mastered the contents of Mr. Bloxam's book.

Pamphlets Received.

NOTES UPON CHICLE. By GEO. A. PROCHAZKA, PH.D., and H. ENDEMANN, PH.D. From the *Journal of the American Chemical Society*, Vol. I. 8vo, pp. 15.—CINCINNATI INDUSTRIAL EXPOSITION OF MANUFACTURES AND FINE ARTS. Rules and Premium List of the Seventh Exposition, 1879.—NORTH CAROLINA BOARD OF HEALTH. Method for Performing Post-Mortem Examinations, 8vo, pp. 32.—EIGHTH ANNUAL CIRCULAR OF THE EIGHTH COLLEGE OF PHARMACY (Colonization Building), City of Washington ('79-80).—THE DETROIT MEDICAL COLLEGE. Twelfth Annual Catalogue and Announcement.—THE DEMAND FOR A WOMAN'S MEDICAL COLLEGE IN THE WEST. An Address delivered at the Commencement of the Seventh Annual Course of Lectures and Dedication of the Woman's Medical College, Chicago, Ill. — ANNUAL ANNOUNCEMENT of Graded Course of Study in the Medical Department of Yale College.—SEVENTH ANNOUNCEMENT of the Physio-Medical College of Indiana.—**Thomas** (Ch. H.). A GENERAL SYSTEM OF MEASUREMENT for Urethral, Uterine, Rectal and other Instruments; and an Adaptable Metric Gauge.—METROPOLITAN MUSEUM OF ART. Ninth Annual Report of the Trustees.—From **Prof. Dr. George Dragendorff** in Dorpat: 1, DARSTELLUNG UND BESCHREIBUNG DER BORCITRONENSAEURE und ihrer Salze, von EDMUND SCHEIBE, Stud. pharm.—2, BEMERKUNGEN IN BEZUG AUF DIE NACHWEISBARKEIT DES STRYCHNINS in verwesenden Cadavern. Von PROF. DRAGENDORFF.—3, THE MONGUMO BARK imported from Madagascar. By PROF DRAGENDORFF.—4, CHININCITRATER (Researches on Citrates of Quinia) in Danish. By K. F. MANDELIN.

NEW BOOKS.

Méhu (Dr.). Traité pratique et élémentaire de Chimie médicale appliquée aux Recherches cliniques. 2d ed. Paris, 1878.

Ossian (Henry). Du tirage du quinquine et de son application à la preparation du vin de quinquina à doses fixes. Paris, 1879, 12mo.

Post (Dr. Jul.). Grundriss der chemischen Technologie. I. Fabrikation der Rohproducte. II. Fabrikation der Endproducte. 2 vols. of 467 and 710 pp. Illustr. 8vo, Berlin. 25 marks.

Carr (H.). Our Domestic Poisons; or, the Poisonous Effects of certain Dyes and Colors used in Domestic Fabrics. 8vo. London, 1879 (Ridgway).

Cooke (M. C.). A Manual of Structural Botany for the Use of Classes, Schools, and Private Students. 18mo, pp. 128. London. 1*s*.

Burnett (Jas. Compton). Gold as a Remedy in Disease. (Hom.) 12mo, pp. 162. London. 3*s*. 6*d*.

Harvey (A.). First Lines of Therapeutics. In a series of lectures 8vo. London. 5*s*.

Williams (C. J.). Supplement to a Handbook of Chemical Manipulation. 8vo. London (Van Voorst). 2*s*. 6*d*.

Stormouth (Rev. James). A Manual of Scientific Terms, Pronouncing, Etymological, and Explanatory, in Botany, Nat. History, etc. 8vo, pp. 490. Edinburgh (MacLachlan); London (Simpkin). 7*s*. 6*d*.

Semple (C. E. Armand). Aids to Chemistry. Part 3: Organic. 12mo, pp. 114. London (Simpkin). 2*s*.

Holdbrook (J.). Test-papers in Chemistry for Home Work. Arranged according to the Syllabus for the Junior Grade of the Intermediate Education Act. 4to. London (Longmans). 6*d*.

Eltoft (Thomas). A Systematic Course of Practical Qualitative Analysis, specially arranged for Students preparing for the . . . Examinations. London (Simpkin). 8vo, pp. 52. 1*s*. 6*d*.

Shinn (Chas. H.). The Pacific Rural Handbook. San Francisco. 12mo, pp. 120. $1.

Clements (Hugh). A Manual of Organic Chemistry, Practical and Theoretical. 12mo, pp. 286. London (Blackie). 4*s*.

Sebastian (L. B.). Digest of Cases of Trake Marks, Trade Names, Trade Secrets, etc. 8vo. London (Stevens & Sons). 21*s*.

Allen (Alfred H.). An Introduction to the Practice of Commercial Organic Analysis: being a Treatise on the Proximate Analytical Examination and Modes of Assaying the var. Organic Chemicals and Preparations, etc. Vol. I. 8vo, pp. 374. London (Churchill). 10*s*. 6*d*.

Hartley (F. W.). Gas Analysts' Manual. London (Spons). 8vo, pp. 144. 6*s*.

Annenkow (N.). "Botanical Dictionary" (*in Russian*). St. Petersburg, 1878. 8vo, pp. 645. $10.00.

Vavin (E.). L'Igname de Chine et son Avenir. Paris (19 Rue de Lille). 8vo, pp. 4. (Extrait).

Skraup (Zd. H.) und **Vortmann** (G.). Zur Kenntniss des Cinchonidins. Wien. 8vo, pp. 16. 30 pfenn.

Pickering (C.). Geographical Distribution of Plants. Plants in their Wild State. Salem. 4to, pp. 524, with colored maps. 16*s*.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.*]

No. 605.—**Glycero-ferrated Cotton** (S. B.).

This is made by steeping cotton fabric or fibre, previously deprived of fatty matter, into a mixture of

Solution of subsulphate of iron.....	1 part,
Glycerin	2 parts,
Water.....	150 "

expressing and drying.

No. 606.—**Ceresin** (W.).

We have already stated that according to the best informed authorities, there *is* a difference between ceresin and ozokerite; the latter being the true natural fossil wax found in Galicia and elsewhere, while the former is a product obtained from it by refinement and other manipulation.

In a former communication we stated, on the authority of Dr. Max Buchner (NEW REM., 1879, p. 174), that ceresin was a mixture of refined ozokerite with carnauba wax. Lately, however, we find another statement in the *Chemiker Zeitung* (No. 15), which outlines the process of manufacture thus:

Fossil wax (ozokerite) is mixed with 2% of cocoa-nut or palm-oil, melted in a cast-iron cylinder provided with a stirring apparatus and steam-jacket, and heated to 80° C. (= 176° F.). Fuming sulphuric acid, to the amount of 7–8%, is now allowed to run in, through a funnel, in a small stream, the mixture allowed to be at rest (under slight warming) for 2 or 3 hours, and the liquid portion drawn off from the tough, tar-like sediment into another vessel. The acid wax in the latter is washed, under application of a gentle heat, with dilute soda solution, composed of 2 parts cocoa-nut oil and 1 part soda-lye, and the whole again left at rest for 2 or 3 hours. The soap carries down all the fine particles of carbon distributed through the mass. The liquid wax is then drawn off and completely washed with water. When neutral, it is returned into the first vessels, mixed with 7 to 8% of sulphuric acid, and again treated with dilute lye, soap-solution, and water. This process is twice more repeated. The wax assumes after each treatment a lighter color, so that after 4 manipulations it has become almost white. To purify it still further, it is filtered hot through fine-grained bone-black, whereby it becomes perfectly white.

No. 607.—**To filter Shellac-Solution** (B. J.).

After having treated the shellac with alcohol or turpentine, until the scales are either dissolved, or the solvent ceases to take up any more, allow to stand for a little while, pour the liquid portion off into another bottle from any undissolved residue [this need not be done, of course, where there is but a trifling sediment], and add to the solution finely-powdered chalk, or prepared chalk, about 1 oz. for each pint. Shake well; then moisten a filter with either alcohol or turpentine, according to the solvent used, fill the filter nearly full with the chalk-shellac mixture, and receive the first portions of the filtrate in a separate vessel, until the pores of the filter are covered by the chalk. When this is the case, the shellac solution will begin to run clear. The filter should be kept full, up to the mark first reached, by slow and gentle refilling, to prevent the paper being covered with a dry varnish in consequence of evaporation. The refilling must be done gently, so as not to disturb the particles of chalk which have settled on the paper. In all such cases it is a good plan to float a flat cork on the surface of the liquid, and to allow the stream from the stock-bottle to flow gently upon the cork.

No. 608.—**Syrupus Rhei et Potassæ** ("Inquisitive").

The *Syrupus Rhei* of the Danish Pharmacopœia will probably answer your purpose best. This used to be formerly called "Syrupus Rhei alkalinus."

Take of rhubarb, in very small and thin slices, freed from powder or dust, 16 parts; potassium carbonate, 1 part. Macerate them for 12 hours, under frequent agitation, with as much water as will be required to produce, after straining and settling, 80 parts of clear solution. To this are to be added 145 parts of sugar.

No. 609.—**Diarrhœa Mixture** (McC.).

It is not possible to recommend a formula which would be applicable in all cases. There are various preparations in common use, as remedies in simple diarrhœa accompanied by tenesmus, colicky pains, etc., among which Dr. Squibb's Cholera Mixture, and Velpeau's Diarrhœa Mixture, are probably the best:

Dr. Squibb's Cholera Mixture:

℞ Tinct. opii,
" capsici,
Spir. camphoræ..... .....āā fl. ℥ i.
Chloroformi purificati.....fl. ʒ iij.
Alcoholis.....q. s. ad fl. ℥ v. M.

Dose for an adult: 20 to 40 minims.

Velpeau's Diarrhœa Mixture:

℞ Tinct. opii,
" rhei,
" opii camphoratæ.....āā fl. ℥ i.
Spts. menthæ piperitæ.....fl. ʒ x.
Tinct. capsici.....fl. ʒ vi.

The following mixture, which is less acrid and biting, will also be found generally useful:

℞ Tinct. kino,
" krameriæ.... .....āā fl. ℥ i.
Syr. krameriæ,
" rhei aromatici.....āā fl. ℥ ss.
Tr. zingiberis..... .....fl. ʒ i. M.

(*Dr. Ch. Moore*).

No. 610.—**Sugar-coating Pills** (McC.).

If you do not possess a regular pill-coating apparatus, but only wish to coat small quantities with sugar, you may use one of the small apparatuses sold for this purpose, consisting of two hollow semi-globes, one of which is provided with a handle, into which the pills are introduced, after being previously coated with a thin layer of a thick mucilage, or better of syrup of acacia, by rotating them upon a moistened slab. Together with the pills a small quantity of very finely-powdered sugar is introduced into the apparatus, which is then closed, and briskly rotated by swinging about and turning on its axis. The smoothness of the surface of the pills depends on the amount of attrition of the pills; hence, the apparatus must be kept in brisk motion, and the amount of sugar must be only sufficient to give a coating.

No. 611.—**Oleum Serpylli** (F. G.).

This is the essential oil of Wild Thyme, *Thymus Serpyllum* L., a labiate plant of Europe. It is thin fluid, and yellowish to yellow when fresh, but by age becomes red or brown and thicker in consistence. Its spec. grav. ranges from 0.890 to 0.910. It is, when fresh, soluble in all proportions of alcohol. Both the oil and the herb have stomachic and antispasmodic properties, but are seldom employed internally. The oil is sometimes added to embrocations, and the herb is used for "sweet-bags" (cushions or bags, containing certain odoriferous herbs, to be placed among linen, etc., as a protection against moths and other insects), and for stimulating baths.

No. 612.—**To dye Hair blond, or brown (brown-black)** (Subscriber.)

After removing all traces of fat or grease by washing with soap and water, the hair is carefully wetted, by means

of a sponge, with a solution of 1 part of potassium permanganate in 100 parts of water. This deposits upon the hair a fine film of manganese dioxide (hydrated), which produces a *blond* color.

A darker, more black-brown tint is produced by applying the following solution: Pyrogallic acid, 1.4 gm.; solution of sesquichloride of iron, 23 gm.; copper-chloride, 25 gm. (easily prepared by dissolving copper carbonate in hydrochloric acid); rose-water, 70 gm.

No. 613.—**Luminous Watch-Dials** (L. H. F.).

There are various substances which have the property of absorbing light when exposed to the rays of the sun, or even to bright, diffused daylight, and emitting the same when placed in the dark, so as to render the surface on which they are placed more or less luminous. The sulphides of barium, calcium, and strontium have this property in the highest degree; besides, there may be mentioned fluorspar, calcium carbonate, calcium phosphate, calcium arseniate, and the natural products: pearls, diamonds, etc. The "Bologna stone," consisting of sulphide of calcium, displays this property in a high degree. The old Italian cobbler to whom tradition assigns the discovery of the property of this stone, and its use to astonish his friends and neighbors, prepared it by heating red-hot, with charcoal, a piece of barium sulphate, such as it occurs frequently in the neighborhood of Bologna. Sulphate of barium made into a firm paste with gum, or with flour and water, and calcined, will produce the substance. It should be kept sealed in a stoppered bottle. According to a correspondent of the *Scientific American*, from which we have taken most of the above, the manufacture of the substance for making watch-dials luminous is carried on at Paris by Mr. André, 39 Rue Lacépède, who has after twenty years' study and experiments, brought the substance to practical use. Its high luminousness is obtained by certain manipulations which are kept secret. The usual color for luminous watch-dials is a blue violet, because it retains its luminousness the longest. Nearly as good results are produced with yellow, yellow-green, green, and orange powders.

No. 614.—**Sheep-Saffron** (W. G.).

This is a common name among the people in certain sections of Tennessee, for sheep's dung, from which a tea [sit venia verbo!] is made, which is used for hives or urticaria. See NEW REM., 1878, p. 2.

No. 615.—**Administration of Salicylic Acid** (Dr. M.).

We have from time to time given formulæ for mixtures, etc., containing salicylic acid, intended to facilitate its administration. A very good method which has lately come to our notice is, to mix the salicylic acid with powdered extract of licorice, or better with ammoniacal glycyrrhizin, and to dispense it in wafer-capsules. Formulæ would be:

℞ Acidi salicylici,
Extract. glycyrrhizæ co.....āā gr. x.
Mix. Dispense in wafer-capsule.

℞ Acidi salicylici,
Glycyrrhizini (ammoniati).....āā gr. x.
Mix. Dispense in wafer-capsule.

Compare also NEW REM., 1878, p. 350.

No. 616.—**Explosive Colored Fires** ("Subscriber"—*June* number, p. 184).

We have mislaid your card or letter, in which you ask us to put the question, whether any of our readers has had practical experience with the explosive character of colored fire mixtures. Please send us your address again, and we will communicate with you.

No. 617.—**The New Preserving Agent** mentioned by us on page 212 of our July number is not an article of commerce on this side of the Atlantic, so far as we are aware. It would hardly pay to import it from Europe; but it will be a very simple operation to have it made here through some chemist or pharmacist.

No. 618.—**Colors for Show-Bottles** (E. M. E.).

In preparing colored solutions for show-bottles, a sufficient quantity should be made at once to fill the globe, and to have a small supply left over, from which to refill the former from time to time. Addition of water to a colored solution which has lost a portion by evaporation tends to impair the depth of color and brilliancy. Each solution must be filtered very carefully, so as to be entirely clear. Some of the more usual colors are prepared as follows:

Amber.—Digest 1 part of dragon's blood, in coarse powder, with 4 parts of sulphuric acid; when dissolved, dilute with pure water to the desired tint and filter.

Blue.—Dissolve 4 oz. of sulphate of copper in 2 pints of water containing 1 oz. of sulphuric acid, and filter.

Or, dissolve Prussian blue in muriatic acid, or in solution of oxalic acid; add water until the proper shade is produced, and filter.

Yellow.—Dissolve chromate or bichromate of potassium in distilled water, and filter through powdered glass, or glass-wool.

Orange Red.—Dissolve bichromate of potassium in water, and add for every pound of the salt 4 oz. of sulphuric acid. Filter as in the preceding case

Red.—Dissolve carmine in water of ammonia, and dilute with water to the desired shade. About ½ drachm of carmine will be required for 1 quart.

Violet.—Add 1 oz. of nitrate of cobalt to 2 quarts of a saturated solution of ammonium carbonate. After thorough shaking, add sufficient ammonio-sulphate of copper to produce the proper tint. Then filter.

Green.—Dissolve 4 oz. of sulphate of copper in 1 quart of water, then add sufficient bichromate of potassium to render the liquid green (about 5 drachms).

Or, dissolve 4 oz. of sulphate of copper, and 8 oz. of chloride of sodium in 1 quart of water and filter.

Or, dissolve ½ oz. subacetate of copper in 2 oz. acetic acid, and dilute with water. A little ammonia may be added.

Or, dissolve 4 oz. of sulphate of copper in 1 quart of water, and add 6 oz. nitric acid. This looks bluish-green by reflected or daylight, and fine green by transmitted light. Filter through powdered glass or glass-wool.

Or, metallic nickel, 1 oz.; nitric acid, diluted with twice its weight of water, sufficient to dissolve it; water, to make 1 gallon.

Aniline Colors.—Various shades of these may be used, such as fuchsine, Hofmann's violet, etc., but they fade after a while and have to be renewed. The solutions should always contain about ¼ or ⅓ alcohol. A little glycerin is thought to be of advantage.

Freezing of Show-bottle Liquids.—If there is any probability of any of the show bottles being exposed, during winter, to a freezing temperature, a portion of the water of each solution should be replaced by alcohol. A gallon of a colored solution should contain 2 or 3 pints of alcohol.

No. 619.—**Artificial Fruit-essences or Ratafias** (J. A. and M. B. & Co.).

As a supplement to the formulæ given in our July number, p. 218, we think the following, published by Aug. Gaber, may be of interest to you:

Essence of Pineapple.—Amyl-butyric ether, 20; oil of cognac, 10; œnanthic ether solution (1 part of the pure ether in 1000 of alcohol) 10; rose-water, 40; tartaric acid, 40 grams; liquor-body, 10 quarts. (Yellow.)

N. B.—The "liquor-body" consists of the following solution:

Solution of best sugar, containing 1 kilogram in 1 quart, that is, containing 66% of sugar.....	5 quarts.
Alcohol, 90%.....	4 "
Water.....	1 quart.

Essence of Bergamot.—Oil of bergamot, 3; rose-water, 10; tincture or essence of vanilla, 5; tincture of cinnamon, 5; tartaric acid, 20 grams; liquor-body, 10 quarts. (Yellow.)

Essence of Cacao.—Cacao, roasted, 1000; tincture or

essence of vanilla, 10; tincture of cinnamon, 5 grams; liquor-body, 10 quarts. (Dark-brown.)

Essence of Curaçao.—Oil of bitter almonds, 2; oil of orange, 2; oil of cloves, ½; oil of neroli, ½; tincture or essence of vanilla, 4; oil of cinnamon, ½ gram; liquor-body, 10 quarts. (Brown.)

Essence of Lemon.—Oil of lemon, 4; orange-flower water, 10; tartaric acid, 40 grams; liquor-body, 10 quarts. (Yellow.)

"*Bishop.*"—Cherry-juice, 4 quarts; 10 oranges; Curaçao-orange peel, 50 grams; cloves, 10; cinnamon, 10 grams; alcohol, 4 quarts; sugar, 2 kilos. (Yellow.)

Essence of Calamus.—Oil of cardamoms, 3; oil of calcium, ½; tincture or essence of vanilla, 4; tincture of cinnamon, 4; liquor-body, 10 quarts. (Yellow.)

Bitter Essence.—Oil of angelica, 1; oil of cardamoms, 1; oil of cognac, 2; oil of marjoram, ½; oil of melisse, ½; oil of absinth, ½; raspberry-essence [tincture of orris root with very litle amyl-butyric ether], 5 grams; liquor-body, 10 quarts. (Brown.)

No. 534.—**Hay's White Liniment.** Mr. William K. Mattern obliges us with the following answer to the query in our April number.

℞ Acidi muriatici..... ℥ ix.
Tinct. opii..... ℥ ixss.
Ol. terebinthinæ..... ℥ viij.
Camphoræ..... ℥ xiv. M.

No. 620.—**Phytolacca** (Dr. M.).

In answer to your inquiries, we publish on page 258 a paper by A. C. Ehrhard, which had not been previously published. The substance called *phytolaccin* is not a definite compound, but a mixture of resin and other principles, which are precipitated from a concentrated alcoholic solution by water. It is not improbable that an alkaloid accompanies them; but this requires further proof and experiment.

No. 621.—**Triplex Pills** (H. B. & Co., and B. F.).

This name is applied to several formulæ of pills, containing three principal active constituents, accompanied sometimes by correctives or carminatives. Their action is intended to be laxative or purgative. Here are some of the formulæ:

1. ℞ Aloes Socotrinæ..... ℥ 2.
Scammonii..... ℥ 1.
Pil. hydrargyri..... ℥ 2.
Ol. carui..... ℥ 2.
Syrupi..... q.s.
Make 600 pills.

2. ℞ Aloes Socotrinæ..... ℥ 1.
Scammonii..... ℥ 1.
Pil. hydrargyri..... ℥ 1.
Ol. tiglii..... ♏ 20.
Ol. carui..... ♏ 90.
Tr. aloes et myrrh..... q.s.
Make 400 pills.

In this locality, the name is commonly understood to apply to the latter formula which is that of the late Dr. John W. Francis.

Formulæ of Proprietary Remedies.

We have again a number of letters inquiring about the composition of various secret or proprietary remedies, the formulæ of which have never been published. Should we receive reliable information of their composition, we will publish their formulæ, provided the interests of the public can be served thereby.

Cement for Uniting Metal to Glass.—Dissolve 1 lb. of shellac in a pint of strong methylated spirit (alcohol containing 10% of wood-spirit), to which is added 0.05 part of solution of india-rubber in carbon disulphide.

Or, take 2 oz. of a thick solution of glue, and mix with 1 oz. of linseed oil varnish, or ¾ oz. of Venice turpentine. Boil together and agitate.

The pieces cemented should be fastened for 50 to 60 hours to get fixed.—*Monthly Mag. of Pharm.*

NOVELTIES.

New Soaps.

Among the new soaps for toilet purposes, the following have lately come to hand: *Pears's Transparent Soap*, especially adapted for shaving purposes, makes a creamy lather, causes no irritation of the skin, and has an agreeable, but not too evident perfume. For this purpose, it is made in flat discs to fit a shaving cup, or in cylindrical pieces packed in paste-board boxes and better calculated for the use of travellers. Another form is that of oval cakes for the wash-stand. A. & F. Pears, depôt 91 Great Russel St., London, W. C., is the manufacturer.

Newbery's Glycerated Coal-Tar Soap.—This is also an English soap, manufactured by F. Newbery & Sons, 37 Newgate St., London, E. C.—an establishment which has been in existence in one locality over a century and a quarter. The soap is in yellow, oval cakes, having a faint odor of coal-tar, and forms an excellent lather. Its medicinal properties recommend it for a number of hygienic and other uses.

Sargent's Antiseptic Thymoline Soap is made by Bazin & Sargent, of this city, is said by its manufacturers to contain chemically pure thymol, and is highly recommended by them for toilet purposes and as an application to parasitic skin affections. A shaving cream of the same nature is also made by them. For those who wish to obtain a soap the odor of which will be unobjectionable, we know of none superior to this. Its detergent qualities appear to be also as satisfactory as could be wished.

Borated Cotton.

We are informed by Mr. C. Am Ende, of Hoboken, N. J., whose advertisement of Borated Cotton has some time appeared in New Remedies, that the method for manufacturing borated gauze and cotton given on page 250 has been patented by him in this country. We take this occasion to say that Mr. Am Ende has for some time been manufacturing very satisfactory articles of some of the preparations referred to.

Rimmel's New Sanitary Appliances.

Mr. Eugene Rimmell, of 96 Strand, 128 Regent street, and 24 Cornhill, London, whose skill as a perfumer is well known, and whose toilet wares have such universal sale, has lately taken advantage of the fact, recently established, that the odors of flowers, when exposed to air, develop ozone, to prepare a series of ozonizing appliances.

A coarse vegetable powder impregnated with aromatics is furnished in four-ounce tin boxes, which is intended to be spread in small quantities upon a plate in a room where there are odors to be destroyed, and occasionally stirred, so as to expose a fresh surface to the air.

Another article is a quilted pad of flannel and cotton wool, to be wet with a cologne containing, it is said, odors from the pine and eucalyptus, and hung in a room, closet, or other place, the air of which it is desired to purify.

Hayes' Pharmaceutical Preparations.

We have received from Mr. J. F. Hayes, of the St. George Pharmacy, corner Broad and Walnut streets, Philadelphia, two samples of his specialties, viz., Bronchial Wafers and Compressed Tablets of Soda Mint. The former we have not had occasion yet to use, but they are well made, and, to our taste, appear to contain among other ingredients licorice paste and chlorate of potassium.

The tablets are especially noteworthy as being composed of a remedy for indigestion and its accompanying symptoms, which is quite popular, we believe, in Philadelphia. In the form here presented they are convenient to carry in the pocket (in a small vial), and deserve to meet with very general favor.

Nelson's Gelatine Lozenges.

THESE round lozenges, composed of pure gelatine, flavored with citric acid, are made by G. Nelson, Dale & Co., 14 Dowgate Hill, London. They are sold in oval tins suitable for retailing, or in tin cans holding 1 lb. and will be found extremely useful, not only, as the makers suggest, for public speakers and vocalists, but likewise for pedestrians, sportsmen, and persons who are collecting botanical, entomological, and other specimens, who are often tempted to resort too freely to the use of water to relieve dryness of the mouth and throat. Besides water or milk, we know of nothing which will answer this purpose so nicely as a small amount of citric acid, and there is no form in which it can be used, with which we are acquainted, so convenient as this. The acid not only relieves the sense of discomfort, but is not followed by the exhaustion which results from water-drinking at such times.

Cresol as a Remedy for Whooping Cough.

PAGE, KIDDER & FLETCHER, of 10 Warren st., New York, manufacture a little apparatus for vaporizing cresol, which is now recommended as a remedy in whooping cough, and which appears to deserve a trial. It is true that the number of remedies which have from time to time been highly vaunted in the treatment of this affection is by no means small, and that they have all, at one time or another, been claimed to be almost specific, but physicians who have faith in the zymotic character of the disease can readily appreciate the influence which a vapor of this substance, carried by the inspired air into contact with the mucous membrane of the air-passages, would have upon the minute germs which are presumed to exist there, and cause by their presence the catarrhal and spasmodic elements of the disease. The apparatus consists of a metallic tripod supporting a small basin into which the cresol can be placed. One of the miniature night-lamps, burning kerosene and placed beneath the basin, furnishes the heat required.

"Strictly Pure Pepsin."

A SAMPLE of pepsin manufactured by Carl L. Jensen, M.D., of Vermillion, Dakota Territory, has lately come to hand, which is claimed to be entirely pure. Much of the present lack of confidence among physicians respecting the value of this remedy is, without doubt, owing to its admixture with starch, sugar of milk, and other substances, and the manufacture of a pure article and its presence in the market should be met with favor. The sample which we have received has a color similar to that of light-brown sugar—sometimes called "coffee sugar"—and consists of minute glistening scales which have an attractive appearance.

We are not informed of the price at which this pepsin is sold, nor whether it is yet to be had in the market, and must refer, for information on these points, to the manufacturer.

Quotations from the Talmud on Medical Matters.

—Mr. Magnus, Sen., of Berlin, publishes in the *Deutsch. Archiv f. d. Geschichte d. Medicin* (1879, p. 260) the following passages from the Talmud:

At the head of all diseases am I, the Blood; at the head of all remedies am I, the Wine.

Eat hearty: You will feel its effects when walking.

A drop of cold water mornings (in the eye), and washing the hands and feet in the evening, are better than all eye-salves.

Before a distant physician may arrive, the eye may become blind.

Badly off is the town whose physician has the gout, and whose oculist only has one eye.

Honor the physician before you need his services.

A physician who makes gratuitous cures is of no account.

The door, which is closed to prayers for alms, opens for the physician.

NEW PATENTS.

[*The following list is compiled from official sources, especially for* NEW REMEDIES, *by S. H. Wales & Son, Solicitors of Patents, 10 Spruce St., New York, who will furnish gratis to subscribers any information relating to this department.*]

PATENTS GRANTED DURING MARCH, 1879.

March 4th, 1879.

Dental chair, H. Woodbury 213,021
Enema syringes, etc., of India-rubber, manufacture of, J. G. Ingram 212,939
Pump and syringe, combined breast, M. Van Beust. 213,014
Syringe, D. C. Perkins & J. Davol 212,975

March 11th.

Abdominal appliances for movement cure, D. T. Gale 213,044
Dental drill, C. Poor (R.) 8,624
Dental-engine hand piece, B. S. Brown 213,167
Dental plugger, H. Richmann 213,134
Truss, F. Wilkins & A. A. McLean 213,271
Truss-pad, N. Jones (R.) 8,623

March 18th.

Bottle-stopper, J. E. Woodward 213,488
Cigarette, medical, F. J. Kochert 213,431
Dental saliva-ejector, G. B. Snow 213,356

March 25th.

Dental engines, hand-piece for, W. A. Johnston & A. W. Browne 213,662

TRADE MARKS REGISTERED DURING MARCH, 1879.

Medicinal Preparations.

7,054. William J. Brown, Washington, D. C. The vignette or portrait of a man, substantially as shown in the fac-simile.

7,056. Faulkner & Craighill, Lynchburg, Va. The monogram "F. and C." around and within the representation of a druggist's mortar and pestle, substantially as shown.

7,057. George W. Folts, Brooklyn, N. Y. A spread eagle and the name or title "Harris."

7,059. J. R. Mathewson & Son, Providence, R. I. The arbitrarily selected words "White Lily" and the figure or pictorial representation of a bunch of pond lilies.

7,071. Ag. Seidel & Co., Chicago, Ill. The shield or escutcheon having upon its face five acorns, the stems of which are united to form a small tree.

7,072. George H. Shafer, Fort Madison, Iowa. The letters "M'F'G Co.," and the symbol of a star, meant to express "Star M'f'g Co."

7,077. Joseph Fleming, Pittsburg, Pa. The word-symbol "Egyptian."

7,079. James H. Langley, New York, N. Y. The word-symbol "Anti-Lean," and the pictorial representation of two figures.

7,082. John L. Standart, Lemoore, Cal. The figure of an eagle grasping in its talons a bunch of herbs, and with outspread wings, with the figure of a globe beneath the eagle, as shown.

7,083. The Pond's Extract Company, New York, N. Y. A pictorial device or landscape, having in its foreground a tall shrub that extends from the lower left-hand corner to, and nearly filling the upper part of the device. The shrub is of peculiar form, and has blossoms as well as leaves. In the middle ground is a meandering river, and beyond it are men with axes, felling shrubs or small trees, and a wagon laden with trees or shrubs and drawn by horses. In the background is a high hill, near the base of which is a mill

or distillery, with smoke ascending from its chimney. Below the landscape are the words, in ornamental block-letters, Pond's Extract.

7,085. Pond's Extract Company, New York, N. Y. The words "Pond's Extract."

7,092. Perry Davis & Son, St. Lawrence, Montreal, Quebec, and James I. Fellows, St. John, New Brunswick, Can. An ornamented band surmounted by a crown, and below the band the fac-simile of the autograph of James I. Fellows.

7,101. Billings, Clapp & Co., Boston, Mass. The word-symbol "Phosphorole."

7,107. Ernest Grillon, Paris, France. The representation of a branch of the *Tamar Indica* tree, the autograph signature "E. Grillon," and the word "Grillon" as shown.

7,113. Emily Chandler, New York, N. Y. The arbitrary symbol consisting of the picture of a shrub or branch of chamomile.

7,114. Ernest De Prati, San Francisco, Cal. The word-symbol "Hamburg."

7,116. Thomas W. Kennedy, Newark, N. J. The arbitrarily selected word "Chevron."

7,126. R. L. Moore, Spring Valley, Minn. The arbitrarily selected words or fanciful title "May Flower."

7,128. Richard D. Wood, New York, N. Y. The pictorial representation of a garter, a balance, a mortar and pestle, and olive-branches, and the name or title "Dr. Craig's."

7,138. William Pfunder & Co., Portland, Oreg. Engraving of the head and upper portion of the body of an infant, with the letter "P." printed or stamped on the drawing or picture of a locket placed just below the chin of the infant, and below this, the words "Trade Mark," stamped or printed in Roman capitals. Immediately below said words last named is a monogram composed of the letters "W. P.," printed or engraved with the engraved or printed Latin word "Omnes" on the left of said monogram, and the engraved or printed Latin word "Prosint" on the right of said monogram, the figure of said infant being nearly enclosed by the representation of a laurel wreath starting below the monogram and nearly meeting above the head of the infant, as arranged and shown.

Soap, Perfumery, etc.

7,078. Richard M. Hobbs, New York, N. Y. The Chinese word-symbol "Mëen Fun."

7,084. The Pond's Extract Company, New York, N. Y. The pictorial representation of a bottle in a wrapper.

7,091. George W. Williams & Co., Hartford, Ct. The word-symbol "Chinese."

Chemicals, Paints.

7,106. Dean, Gracey & Co., Virginia City, Nev. The representation of a bear slipping from a greased pole.

7,108. Collier White Lead and Oil Company, St. Louis, Mo. The arbitrarily selected-letters "C. C."

Remedies for Enuresis.—Dr. J. C. Flood recommends the employment of tincture of cantharides in doses of a minim, and tincture of the chloride of iron given three times daily in gradually increased doses. The following is suggested by Dr. Holderness.

℞ Acid. benzoici..... ℥ ij.
Syr. aurantii..... ℥ ij.
Aquæ.....ad fl. ℥ ij.

A half-ounce to be given three times daily, and the third dose to be taken after emptying the bladder and going to bed.

Another formula is as follows:

Potassii bromidi..... ℈ i.
Ext. belladonnæ..... .....gr. iv. ad vi.
Infus. digitalis.....ad fl. ℥ viij.

For an adult, half an ounce twice daily; for a child, a drachm, three times daily.

ITEMS.

American Pharmaceutical Association.—It is to be hoped that the meeting of this association at Indianapolis, on September 9th and the following days, will be numerously attended. The efforts of the Local Secretary, Mr. Eli Lilly, to obtain a reduction of fares on the railroads from the East has not been as successful as was anticipated. This is, however, no fault of his, but is caused by the objections raised by some of the Grand Trunk Lines. The plan has been to go by either one of two routes, according to choice, and to stop over Sunday, either at Pittsburgh, or at some convenient point on the Baltimore and Ohio Railroad, and reach Indianapolis at 11 P.M. on Monday night. So far as advices have reached us at present, it is necessary to procure *beforehand* an order from Mr. Lilly for a round trip ticket at reduced rates from Pittsburgh to Indianapolis. Full fare will have to be paid from starting point to Pittsburg. This refers, of course, only to such members as reside east of the Alleghanies.

The other railroad reductions which have thus far been secured by Mr. Lilly, and the Chairman of the Railroad Committee, Mr. J. W. Bryan, are the following:

1. From Texas, *via* Missouri, Kansas and Texas Railroad, to Indianapolis and return, *one and one-fifth fare*, on certificate from Mr. L. Myers Connor, Dallas, Tex.

2. *Full fare one way, and free return on certificate of Local Secretary*, from any point of their lines: St. Louis, Vandalia, Terre Haute, and Indianapolis Railroad (Vandalia Line); Indianapolis and St. Louis Railroad; Evansville and Terre Haute Railroad; Louisville and Indianapolis Railroad; South Carolina Railroad (Charleston and Augusta).

3. *Full fare (or three cents per mile) going, and one cent (or one-third fare) returning on certificate of attendance from Local Secretary:* C. C. C. and I. R. R. (Bee Line); Indianapolis, Peru and Chicago Railroad; Cincinnati, Hamilton and Indianapolis Railroad; Louisville and Gr. Southern; Louisville, Cincinnati and Lexington Railroad.

4. *Round trip excursion tickets to be obtained only upon previous application to and order from Local Secretary*, Mr. Eli Lilly, *one and one-third fare:* Canada Southern Railroad; Grand Trunk Railway of Canada.

Four cents per mile one way: Pittsburgh, Cincinnati and St. Louis (Pan Handle) Railroad; Indianapolis, Bloomington and Western Railroad.

One and one-fifth fare: Mobile and Montgomery Railroad; Indianapolis, Cincinnati and LaFayette Railroad.

College of Pharmacy of the City of New York.—The fiftieth annual course begins September 22d inst., with classes which promise to be as large as any previous one. The museum and other collections have been thoroughly overhauled, most specimens renewed, and not a few new ones added. The Herbarium has likewise been revised and enriched by the addition of about 600 new specimens, forming a valuable materia medica series.

Two free scholarships for the Senior Class have been created by the Board of Trustees. They are intended to encourage meritorious students who may not be able to meet the necessary expenses. Admission will be given through competitive examination in general and professional subjects. The library has been re-arranged, and a card catalogue has been made.

Students are reminded that the choice of seats depends on the order in which lecture tickets are taken.

The Project of the new Law regulating the Practice of Pharmacy in France, as finally adopted by the *Association générale des Pharmaciens de France*, and recommended by them for adoption by the Legislative Body, contains various features of interest, both professionally and commercially, and shows also the peculiar drift of the times. Several of its provisions must appear

to all liberal-minded men as absurd and ridiculous. Nevertheless it cannot fail to be of interest to all pharmacists, even outside of France, and shows that the theory of "patriarchal protection of the people by the Government" is still thought to be not incompatible with a republican form of government:

1. No person, no matter what his nationality may be, can exercise the profession of pharmacy, or own a drug-store, or prepare, sell, or dispense any medicine, either for man or animals, unless he has obtained a diploma as "pharmacien" in a French school, according to the form prescribed by the laws and regulations in force.

Medicine is understood to be every substance, simple or compound, natural or having undergone a process of preparation, recognized or proclaimed as possessing curative or preventive virtues, and intended to be taken internally or to be applied externally.

2. Every pharmacist, before taking possession of an already established store, or before establishing a new one, shall make a declaration to this effect and produce his diploma before the Prefect of the Department, or the Under-Prefect of the district ("sous-préfet de l'arondissement"), and before the clerk of the court in the jurisdiction of the store. He shall at the same time prove that he is the proprietor or personal lessee of the store.

3. After eight years, from the date of the promulgation of this law, no more diplomas of "second-class pharmacists" (pharmacien de deuxième classe) will be issued.

4. No pharmacist can, under any circumstances, maintain more than *one* open or public shop, and his name must be exposed, in a plainly legible manner, upon the sign.

5. Dangerous medicines, delivered by pharmacists, must be distinguished by a label, bearing the name and address of the latter. A special label shall indicate medicines which are intended for external use, or for veterinary purposes.

6. Pharmacists may deliver freely, on their own responsibility and on demand of a customer, all simple and compound medicines, excepting those mentioned in the following paragraph:

Arsenic and arsenical salts, poisonous alkaloids and other simple substances which are toxic in small quantity, shall not be sold alone or in mixture, *for medical purposes, except* by pharmacists and on a prescription, written, signed, and dated by a person having the lawful right to prescribe. Each prescription must be copied into a special book, to be preserved for at least ten years, in order to be produced whenever demanded by the authorities.

These same substances shall not be sold for the use in the arts, or agriculture, or destruction of noxious animals, *except* on a demand written, dated and signed, made by a known householder.

Each order must be copied into a special book to be preserved, like the other, for at least ten years.

The list of poisonous substances mentioned in the present article will be made out by a Commission, composed equally of professors of pharmaceutical high-schools (Ecoles supérieures de Pharmacie) and of practical pharmacists. It will be revised annually, if necessary.

7. Neither a pharmacist, nor any other person, shall dispense, sell, expose, or advertise any secret remedy.

Secrect remedies are understood to be:

a. Simple drugs which are not sold under their true name.

b. Compound medicines, which are not contained in official pharmacopœias, French and foreign; or the sale of which has not been authorized by the French Government, after the approval by the Academy of Medicine; or those which are not prepared, for a *special* case, on an explicit prescription of a person having the legal right to prescribe.

8. Advertisements of medicines in political journals, or by placards in public streets or places, and all distributions of prospectuses upon the public street or in houses are expressly forbidden.

9. Pharmacists are prohibited from practising medicine, and, on the other hand, physicians or veterinary practitioners are forbidden to deal in medicines, except in the case provided for in Article 11.

10. The simultaneous practice of human or veterinary medicine and of pharmacy is forbidden, even to those persons who possess both the diploma of medicine or veterinary practice and that of pharmacy—except in the case provided for in the next section.

11. As an exception to the two preceding articles, those medical and veterinary practitioners who are established in districts where there is no drug-store, may furnish necessary remedies to those of their patients who reside at a distance of more than 8 kilometres [4.971 or nearly 5 miles] from a drug-store, without, however, having the right to keep open shop, or to deliver any medicine at their residence.

12. Every partnership between a pharmacist and a medical or veterinary practitioner, with the view of owning a drug-store, or to sell any medicine whatever, as well as any secret compact between the aforesaid parties, is strictly prohibited.

13. A pharmacist cannot associate himself with a person not possessing a diploma—except to take this person as a silent partner—if the object of the association is the management of a drug-store or the manufacture and *retail sale*—that is, the direct sale to consumers, of one or more pharmaceutical products.

An association under a collective name is permitted, when it has as object the manufacture and *wholesale* trade of pharmaceutical products, under the condition, however, that the associated pharmacist shall have sole charge of the manufacture of these products.

14. On the death of a pharmacist, his widow or his heirs may, during a period not exceeding one year from the day of death, keep the shop open under the management of a pharmacist who had retired from actual practice, or under an assistant acting under the supervision of a pharmacist.

The supervising pharmacist and the practising assistant must fulfil the special conditions which will be prescribed by a decree of the public Administration.

15. The exercise of pharmacy under the guise of a borrowed name is particularly forbidden; and this prohibition applies not only to the pharmacist who has lent his name, but also to the person who uses it to carry on his business.

16. Druggists, grocers, herbalists, and all other persons not in possession of a diploma as pharmacist are expressly forbidden to manufacture, expose for sale, sell, or distribute any pharmaceutical preparation or compound.

Only *druggists* may sell, at *wholesale*, simple medicinal drugs, without the right, however, under any circumstances to dispense these substances at *retail*, that is, directly to the consumers.

17. Religious communities, hospitals, "hospices" [lodging houses in mountain passes], companies, and all other public charitable, industrial or commercial establishments may carry on a pharmaceutical establishment only for their own particular use. Each of these pharmacies must be situated in the interior of these establishments, and managed by a pharmacist, who is legally received there, or who dwells or resides in the community. These establishments can neither sell nor distribute gratuitously, to outside persons, any simple or compound medicine.

18. Hereafter no more certificates of herbalists will be issued. There will be added to the codex a list of medicinal, indigenous, non-poisonous plants, green or dry, which may be sold without restriction.

19. There will be published, every ten years, an edition of two official formularies of the Codex [French Pharmacopœia], which will be published in Latin and French by commissions to be composed of such persons as may be decreed by the public administration.

One of these formularies is to comprise the formulæ of medicines and officinal preparations employed in treating human diseases. The other shall comprise medicines in use in veterinary practice.

The commissions charged with the publication of these

formularies shall be permanent and shall undertake, if necessary, the publication of annual fasciculæ containing the formulæ of medicines newly introduced into therapeutics.

Pharmacists have to conform to the formulas and terms employed in these above-mentioned formularies.

20. District inspectors, chosen from among pharmacists of the first class, who have been in the exercise of pharmacy, shall annually visit the offices and stores of pharmacists, in order to verify the good quality of the medicines found therein. At the same time, they shall inspect the establishments mentioned in Article 17, as well as examine the medicines in the possession of physicians who enjoy the privilege mentioned in Article 11.

They shall take evidence, if occasion arises, of the various infractions of the present law which may have been committed either by the pharmacists, or by the physicians, or by the establishments mentioned in Article 17.

In each arondissement, special inspectors, chosen from among pharmacists of the first class, who have been, or are still, in the exercise of pharmacy, will be charged with examining into all infractions of the present law, which may have been committed by persons other than those mentioned in the preceding paragraph.

These inspectors, in the execution of the said examinations and verifications, may lawfully undertake all necessary confiscations and examinations (tests). Their minutes (or reports) shall be valid in law, until proven to be incorrect.

21. In each department, there shall be established a Disciplinary Board, composed of pharmacists elected by the pharmacists of the department. These Disciplinary Boards shall have the duty of instructing the administration on all questions relating to the exercise of pharmacy, as well as to watch, in the interest of public health, over the dignity and honor of the profession.

Charles A. Heinitsh, the first President of the Pennsylvania Pharmaceutical Association, re-elected at the recent meeting held in Pittsburgh, belongs to a family that has for many years been connected with the drug business. Born in Lancaster, Pa., July 31st, 1822, he spent the early years of his life at home, and at the Litiz Academy. In 1835 he entered the preparatory department of Pennsylvania College, but after remaining two years was obliged to relinquish his studies on account of impaired health. He was then placed behind the counter in his father's store, where he has remained till the present time, first as clerk, then as partner with his father, and finally, in 1849, as the proprietor. The business conducted by Mr. Heinitsh for more than thirty years was started by his grandfather about the year 1782, and continued by him till his death, in 1803. His sons succeeded him, and in 1818, the father of Mr. Heinitsh became the owner, and carried it on till 1849. In that year, as stated, Mr. Heinitsh commenced business for himself, succeeding his father. Mr. Heinitsh is better known as an active and successful business man than for any extended scientific publications. He has not failed, however, to make known the results of his investigations, and his large experience in the business from time to time, through the *Journal of Pharmacy* and the Proceedings of the American Pharmaceutical Association. He early became a member of the latter organization, and has always labored earnestly for its success. Among the first to see the advantages of a State Pharmaceutical Association, he entered heartily into the work, and the prosperity of this organization is largely attributable to his efforts. Kind and genial in his manner, he makes many friends. As a citizen he has always manifested a great deal of interest in the improvement and prosperity of his native city.

California College of Pharmacy.—A change in the time for holding the term of this school has been made this year. Instead of continuing from the middle of March to about the same period in September, the term now commences about the middle of May and will close in November. The object of this change is to allow the students of the Pacific Medical College to attend the course of chemical lectures, and thereby avoid the necessity of delivering two distinct courses.

For the first time prizes are offered to the graduating class. A gold medal of the value of $100 will be awarded to the student having the highest average percentage. The student reaching the next highest average will receive a microscope.

PHARMACEUTICAL CALENDAR.—September.

N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., not quoted in this Calendar will oblige us by forwarding a schedule of their meetings and a list of officers.

Day of Week.	Day of Month.	Society Meetings.
Tuesday	Sept. 2.	Phila. Coll. Ph.—Pharm. Meet. Fittsburgh Coll. Phar.—Trustees' Meeting.
Thursday	" 4.	Louisville Coll. Pharm.—Pharm. Meeting. N. Y. Coll. Phar.—Pharm. Meet.
Tuesday	" 9.	Chicago Coll. Pharm.—Trustees' Meeting. St. Louis Coll. Pharm.—Pharm. Meeting. *American Pharmaceutical Association* meets at Indianapolis, at 3 P.M., and following days.
Wednesday	" 10.	Cincinnati Coll. Phar.—Monthly Meeting.
Thursday	" 11.	N. Y. Germ. Apothec. Society.—Monthly Meeting. Maryland Coll. Ph.—Stated Meet. Phila. Coll. Phar.—Alumni Meet. Newark Pharm. Asso.—Monthly Meeting. Louisville Coll. Phar.—Directors' Meeting
Tuesday	" 16.	Kings County Phar. Asso. (B'klyn).—Stated Meeting. Pittsburgh Coll. Pharm.—Pharm. Meeting. St. Louis Coll. Pharm.—Alumni Assoc.
Monday	" 22.	New York Coll. Pharm.—Beginning of Lectures.

formularies shall be permanent and shall undertake, if necessary, the publication of annual fascicula containing the formulæ of medicines newly introduced into therapeutics.

Pharmacists have to conform to the formulas and terms employed in these above-mentioned formularies.

20. District inspectors, chosen from among pharmacists of the first class, who have been in the exercise of pharmacy, shall annually visit the offices and stores of pharmacists, in order to verify the good quality of the medicines found therein. At the same time, they shall inspect the establishments mentioned in Article 17, as well as examine the medicines in the possession of physicians who enjoy the privilege mentioned in Article 12.

They shall take evidence, if occasion arises, of the various infractions of the present law which may have been committed either by the pharmacists, or by the physicians, or by the establishments mentioned in Article 17.

In each arondissement, special inspectors, chosen from among pharmacists of the first class, who have been, or are still, in the exercise of pharmacy, will be charged with examining into all infractions of the present law, which may have been committed by persons other than those mentioned in the preceding paragraph.

These inspectors, in the execution of the said examinations and verifications, may lawfully undertake all necessary confiscations and examinations (tests). Their minutes (or reports) shall be valid in law, until proven to be incorrect.

21. In each department, there shall be established a Disciplinary Board, composed of pharmacists elected by the pharmacists of the department. These Disciplinary Boards shall have the duty of instructing the administration on all questions relating to the exercise of pharmacy, as well as to watch, in the interest of public health, over the dignity and honor of the profession.

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PROFESSOR ASA GRAY, OF CAMBRIDGE, MASS